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Live Stock.

Thorough-bred as Used by Distinguished English and American Cattle Breeders and Writers.

The Rev. Mr. Berry in his pamphlet on "Improved Short-horns," as placed in competition with the Improved Herefords" says: "In a number of instances where a Short-horn bull is used with Hereford cows, the calves are ascertained to be worth for the butcher, ten shillings each more than the *pure* Herefords, and this is remarked where they are allowed the milk of the Hereford dam, although so much larger than her *thorough-bred* produce would be." Mr. Berry in speaking of an exhibition where he acted as one of the judges, stated that to "six steers of the *pure* Short-horn, or Tees-water breed, from 18 to 20 months old, was awarded the first premium for fat and symmetry." Thus does the Rev. Mr. Berry use the terms thorough-bred, pure, and improved, as interchangable; as he speaks of "*Improved* Short-horns and Herefords," of "*thorough-bred* Herefords," and "*pure* Short-horn or Tees-water breed."

Paoli Lathrop, writing to the Rev. Henry Colman, about 20 years ago, says, "We have now 25 head which are *thorough-bred* improved Short-horns, without the *least mixture* of other blood, and are, beyond question as *pure* blood as can be produced." Again he says, "There are persons who deceive themselves, and, doubtless others who are guilty of deception, knowing it to be such, in representing *mixed* blooded Short-horns as '*full blood*,' '*pure* Durham' '*thorough-bred*.'"

Henry Whitney of New Haven giving Mr. Colman an account of his Improved Short-horned stock, says, "My calves, at a year old, weigh from 900 lbs. to 1050 lbs.; and I feel confident that a *thorough-bred* Durham steer can be made to weigh as much at 3 or 4 years old as a common steer does at 5 or 6 years old....My cows are mostly *herd book* animals, *thorough-bred*."

John Hare Powel, in speaking of cattle exhibited at a Pennsylvania show in 1827, says, "at four cattle shows held by the Pennsylvania and Philadelphia Agricultural Societies, 56 animals of the Short-horned breed took premiums equal to $11 60, although at one of the shows, the principal herd of Short-horns did not contend for a prize. It is believed that in no instance has any *thorough-bred* individual of the *Improved* Short-horns been beaten by any rival of any other breed, at any show in the United States." Mr. Powel says, "Of the various animals called Short-horns very few are of *pure, improved* blood."—Again he says "It is a well-known fact that in England, *pure* Durham Short-horns are fed the first winter on turnips and straw." Thus did Mr. Powel use *Improved, pure* and *thorough-bred* as convertible terms, sometimes using one and sometimes the others, all in the same sense, as signifying the highest type of the breed referred to, whether of cattle or horses.

The Rev. John M. Wilson, in his "Rural Cyclopædia," a very elaborate Dictionary of Agriculture, published in four large volumes, in Edinburgh, Scotland, in the article on Short-horned cattle, says, "The frame of a *thorough-bred* fattened Short-horn exactly corresponds to the established rules respecting rectangularity of outline."

Dr. G. B. Loring of Salem, in a written address before the Worcester North Society on Stock, which was published in the Agriculture of Masschusetts, says, "Short-horn beef, though profitable to the producer, is not so to the consumer—being coarse in texture, poorly marbled, and from its early maturity, deficient in those nitrogenous compounds which are the true sources of nutriment. This is not true to so great extent of the grades as of the *thorough-*

breds." He again says, "Whoever proposes to purchase the *thorough-breds* cannot be too careful in his selection, for the difference between the genuine *well-bred*, and well-shaped Jersey and the spurious, ... is as great as can be conceived between any two animals. He also speaks of "*pure*-bred *Improved* Short-horns,"—"*pure-bred* Herefords or Devons," evidently using, *improved*, *pure*, *well-bred* and *thorough-bred* as interchangable terms as applied to breeds of cattle, denoting the best of the kind or kinds named.

John Bailey, author of the Agriculture of the County of Durham, Eng., whence the name often applied to Short-horned cattle was taken, says in the preface to the volume, "In the year 1796, at the request of Sir John Sinclair, then President of the Board of Agriculture, "I traversed the County of Durham in various directions for the purpose of drawing up a General View of its Agriculture....Again in 1807, 8 and 9. The preface bears date 1810.—This is regarded as one of the best works on the early history of Short-horns extant, and is quoted as authority in England.

In his chapter of Live Stock, he says, "The cattle bred in this country, have for a great number of years been of the Short-horned kind, the best variety of which having been long found on both sides of the river Tees, have been known by the appellation of the Tees Water Breed. An attempt to improve them (which I suppose was more with regard to size than any other quality,) was made by Michael Dobinson, of the Isle, near Sedgefield, who brought a bull out of Holland, that is said to have improved the breed. A few years after some other adventurers went over to Holland, and as *great bulk* was then considered as the criterion of perfection they brought home a complete lyery animal, with immense buttocks, which did a great deal of mischief; but there were some intelligent breeders that steered clear of this evil;* and from them the *pure* Tees Water breed has decended to the present time, in which were united the properties of feeding to great weight, and being great milkers." Thus it appears quite improbable as the writer thinks, that there is any Dutch blood in the veins of the thorough-bred Short-horns, as has often been stated. Mr. Bailey favors this view.

Mr. Baily speaking of Charles and Robert Colling, says: "These gentlemen let bulls out by the year; the prices are from 50 to 100 guineas ($250 to $500); and the public are [were] so fully convinced of their merits that these celebrated breeders cannot [could not] supply the demand from the PURE BLOOD, which they *are as cautious of preserving*, as the amateurs of the turf are the breeds of their race horses, and with which the takers of bulls are become so well acquainted, that the prices they give, are in proportion to the good qualities of the individuals, and merits of their progenitors—*more regard being paid to their pedigree* than to anything else; for this purpose they have [had] books containing the *full pedigree of their stock*, similar to the stud book of race horses, by which any person wanting to purchase any of their stock, or to hire bulls, may see how they are decended."—This is the testimony of a man selected to make the survey of Durham County, by Sir John Sinclair, President of the Board of Agriculture. The Messrs. Colling's famous sale took place in 1810, about the time Bailey's book was published, showing that he enjoyed an opportunity of knowing the truth of what he said, being the contemporary of the Messrs. Colling, the great improvers of the Short-horns. His testimony of "the demand for PURE BLOOD," (the capletters are Mr. Bailey's,) shows their purity in being free from Dutch, Kyloe or Galloway blood at that time. Hence the *pure*, *thorough-bred* Short-horn was known to be pure then, and why should the breed no still exist in its purity? It probably does so exist.

The Rev. Dr. Gilman of Charleston, S. C., a man of distinguished literary attainments, writing a Memoir, says, "There are many of the *thorough-bred* sons of New England, who sprang *unmixed* from Puritan ancestors."

Thus has the writer shown from a great variety of sources in this and a former article on the same subject, that the word *thorough-bred* has as fixed and definite a meaning in the literature concerning Live Stock as any other descriptive epithet used by distinguished writers. He has shown that it is used by old and modern writers both in England and the United States, in the same sense as *pure-bred*, *well-bred*, *improved*, or in one phrase, animals having an undoubted

*Of these, Mr. Millbank, of Barringham, and Mr. Croft of Barford, were the most eminent, and were considered as having the best and purest breed of the district at that period, (about 70 years since: [The reader will keep in mind the date of the author's work.]) the colors of their cattle were white and red; and white with a little red about the neck or roan. This information was communicated by Thomas Conner, now [then] near 90 years old; and Geo. Culley says, that he had repeatedly heard his father state the same particulars. The colors above being similar to those of the present improved breed of Short-horns, makes it probable that they are decendants of the same race.

pedigree, such as is derived from one long line of ancestors without alloy infused by crossing with other races or breeds. Dr. Ogilvie, a distinguished English lexicographer defines the word *thorough-bred* as signifying an animal produced by parents of *full blood* on both sides, as a "*thorough-bred* horse;" and *full blood* or *full blooded*, says, Dr. Worcester, signifies or means a superior and uncorrupted breed or extraction, as a *full blooded* horse." W.
—*Boston Cultivator.*

Sheep Department.

Fine Wool Sheep Husbandry.

By Hon. Henry S. Randall, Cortland Village, N. Y.

THE FRENCH MERINO.

Colbert, the eminent French statesman, was the first, so far as I have ascertained, who attempted the transplantation of the Spanish Merino into other lands. Nor have I learned the date of the attempt. Colbert was born in 1619, and died in 1683. Occupied in incessant and harassing cares, he could give no personal attention to his experiment, and it is to be presumed the sheep encountered among his dependents that obstinate antipathy which subsequently met them, among the ignorant, in every other country outside of Spain. As would be expected under such circumstances, they attracted no notice, and soon disappeared. A subsequent importation of Merinos by M. de Perce, resulted so favorably as to attract the notice of the government, which instituted a series of experiments on the subject, under the directon of the celebrated Daubenton. These proved satisfactory, and Louis XVIII of France applied to the King of Spain for permission to export a flock. The latter not only granted the request, but ordered "that they should be selected from the finest flocks of Spain." A little over three hundred of them arrived safely in France in 1786, and were placed in an agricultural establishment devoted to the improvement of domestic animals, at Rambouillet, about forty miles from Paris.

Gilbert, in his already cited report to the National Institute of France, in 1796, thus describes them and the course of breeding to which they were subjected:

"The stock from which the flock of Rambouillet was derived, was composed of individuals beautiful beyond any that had ever before been brought from Spain; but having been chosen from a great number of flocks, in different parts of the kingdom, they were distinguished by very striking local differences, which formed a medley disagreeable to the eye, but immaterial as it affected the quality. These characteristic differences have melted into each other, by their successive alliances, and from thence has resulted a race which perhaps resembles none of those which compose the primitive stock, but which certainly does not yield in any circumstance to the most beautiful in point of size, form and strength, or in the fineness, length, softness, srength and abundance of fleece. * * * The comparison I have made with the most scrupulous attention, between this wool and the highest priced of that drawn from Spain, authorizes me to declare that of Rambouillet superior."

Judging by the taste uniformily displayed by the French in that particular, there is little doubt that "abundance of fleece" was the first rather than the last consideration—as it here happens to be named — which guided the original selection. And the far more liberal feed which the sheep receives in France—their exemption from the exhausting annual migration of Spain, and a course of breeding specially designed to produce that result, rapidly carried the weight of their fleeces beyond any point ever known in their native country.

Ten years after their iutroduction into France, Lasteyrie gives their average weight of fleeces, unwashed, and thus continues it through a series of years; in 1796, 6 lbs. 9oz.; 1797, 8lbs.; 1798, 7lbs.; 1799, 8lbs.; 1800, 8lbs.; 1801, 9lbs. 1oz.

While all practical wool growers know that some seasons produce lighter fleeces than others—without reference to the apparent condition of the sheep, or to the weather, or any otuer circumstance known to influence the growth of wool, the disparity here exhibited between 1796, and the succeeding years, cannot be thus explained, and it would be preposterous to imagine that the course of improvement had advanced thus abruptly within so limited a period.

Gilbert, writing under government patronage, said, in 1796:

"Almost all the fleeces of the rams of two years old, and upwards, weigh from twelve to thirteen pounds, but the mean weight, taking rams and ewes together, has not quite attained to eight pounds, after deducting the tags and the wool from the belly, which are

sold separately." This is probably, the correct statement, for Livingston, so familiar with the Rambouillet flock, accepts it as such, and subjoins the following remarks: "It is proper to observe that the French pound is almost one-twelfth heaver than the English; but at the same time to note that from the general custom of folding the sheep in France, of feedind them in fallows, and wintering them in houses, they are very dirty, and their fleeces' of course, proportionablp heavier; the loss in washing is about sixty per tent, so that the average weight of the ram's fleece would be, when washed and *scoured*, about six American pounds, exclusive of tags and belly wool.

This process of "scouring," even as Mr. Livingston uses the word, is a very different process from brook-washing; and the belly wool, and clean tags, which are done up with the fleece in this country, would, I think, equal the weight acquired from additional yolkiness and dirtiness; so I infer that to place these unwashed French fleeces on an equality, in respect to cleanliness, with American brook-washed Merino fleeces, we should not deduct more than one-third of the given gross weight. There is something exceedingly unsatisfactory in statistics which are so vague as not to mention the respective numbers of rams and ewes, the fleeces of which go to make up a mean weight—when all know the produce of the former is nearly double that of the latter. But here we have something more definite, and it shows another decided stride upward in the Rambouillet sheep. Lasteyrie, in his report to the National Institute in 1802, states "that the medium weight of fleece of full grown nursing ewes was 8 lbs. 7 oz.; of the ewes of three years old, which had no lambs, 9 lbs. 13 oz.; and two-tenths [grade] ewes 10 lbs. 8 oz." By the rule of estimating above adopted, the Rambouillet grown ewes, sixteen years after the foundation of the flock, produced, on an average, not far from six pounds of wool, washed in the Americam way.

It is true that Mr. Livingston's own sheep, imported from France in 1802, bore less wool, but it is evident that he made fineness instead of quantity of wool, the leading consideration in their selection.

There is nothing incredible in these stated results of this most successful French experiment. The gain in wool is no greater, in proportion, than we witnessed in the American Merino in the sixteen years which suceeeded 1840.

Leaping over a chasm of twenty-five years, let us again examine the Rambouillet sheep, and ascertain the progress of this most interesting experiment through the eyes of an English breeder of Merinos. Mr Trimmer, the author of "Practical Observations," visited this flock in 1827, and the following is his often quoted discription of it:

"The sheep in size, are certainly the largest pure Merinoes I have ever seen, The wool is of various qualities, many sheep carrying very fine fleeces, others middling and some rather indifferent; but the whole is much improved from the quality of the original Spanish Merinos. In carcass and appearance I hesitate not to say they are the most unsightly flock of the kind I ever met with. The Spaniards entertained an opinion that a looseness of skin under the throat, and other parts, contributed to the increase of fleece. This system the French have so much enlarged on that they have produced, in this flock, individuals with dewlaps almost down to the knees, and folds of skin on the neck, like frills, covering nearly the head. Several of these animals seem to possess pelts of such looseness of size that one skin would nearly hold the carcasses of two sheep.

The pelts are particularly thick, which is unusual in the Merino sheep. The rams' fleeces were stated at 14 lbs., and the ewes, 10 lbs., in the grease. By washing they would be reduced half, thus giving 7 and 5 lbs., each."

Washed, in the American way, these rams' fleeces would have yielded an average of about 9½ lbs., and the ewes' fleeces about 6⅔ lbs.

Trimmer describes only the Royal flock. It appears that it was already beginning to be outstripped, in weight of fleece and size of carcass, by private ones. On this subject I prefer to quote the language of John A. Taintor, Esq., of Hartford, Connecticut, by far the most extensive importer of French sheep into the United States; and a gentleman long familiar with all the National varieties of the Merino. It will add to the interest of his remarks on this subject to give his reasons for preferring the French, and his critcisms on other varieties. I should say, in justice to Mr. Taintor, that his letter to me, from which I quote, was written in haste ,on the eve of a journey, and with no expectation that I would adopt its phraseology in making use of its facts. But its terse and careless off-handedness does not detract from its value. He writes:

"In 1828 I imported a lot of Saxony sheep, and at various times, have selected, in France, nearly one thousand of their best

Merinos. In 1842 my friend, D. C. Collins, of this city (Hartford), bought, by my advice, fourteen ewes and two rams, of the Royal flock at Rambouillet. About half of them were good sheep, but for want of care and attention the importation was of but little value to the owner or the country.

* * "I cannot afford to keep any other sheep (for wool) but French Merinos. I call them *best* because they pay best, and that is the true test. Not the sheep that can crawl through the year with the least possible care and feed, but one generously fed and cared for, and bred with close attention and judgement, with always an eye for the most valuable fleece for the manfacturer, and the most valuable carcass for the butcher.

"Since 1828 I have been seven times across the water, and at one time took a year and a half to visit every part of Europe, and examine the flocks and see the owners, hear all they had to say, and then use my own judgement; You are aware that the Spanish Merinos have become almost lost. They are so small, neglected, and miserable that I would not take one of them as a present.

"Improved machinery, too, has had a ruinous effect on the Saxony flocks, as they have learned the art of using medium wool in the place of very fine. The sheep of Saxony, proper, are more than half a million less in number than ten years ago.

"In France, the Royal flock (now the private property of the Emporor) at Rambouillet, which for years, attracted all the sheep masters of Europe to its anual auction sale, bred the fleece so fine, and the animals so delicate, that they could no longer attract attention; and, four years ago they changed the plan, and now sell (when they can) at private sale. The sheep have no wool on the head or legs, and but little on the belly. They are ruined by high breeding; The wool is short and fine.

"In France forage is more than double the price that it is in this country. The price of mutton is also about double, and the price of wool, on the average of the last fifteen years, about 24 to 26 cents per ponnd, always in the grease. Ewes' fleeces average 14 lbs. (in flocks of 500), and rams 20 lbs. to 24 lbs. Say average weight for ewes (all ages) 100 lbs., and rams 200 lbs, One ram I bought (for 3000 francs or $600) weighed 309 lbs., carrying a fleece, unwashed, of 32 lbs. Fair estimate of loss, in cleansing, 60 per cent.

"It is from this class of flocks I have secected my Merinos. It is from wool of this class that the fine French muslin de laines are made, as it has length of staple and fineness, with requisite strength, which is all important.

"Three years ago a gentleman sent me, from Estremadura, a number of Spanish Merino fleeces as a sample (as circumstances did not allow me to see his flock when in Spain.) They were little wads of fleeces; I can send you one if you have any curiosity to see it."

The remarkable fact is made to appear, from these statements of Mr. Taintor, that, at the period of his importatations, there were flocks of 500 in France which produced 14 lbs. of wool to the ewe, and from 20 to 24 lbs. to the rams. If we are to suppose the belly and tag wool excluded from these also, then the ewes produce nearly 9 lbs. 6 oz., and the rams about 14 lbs. 11 oz. of brook-washed wool. If, as I conjecture, grown sheep are only referred to here, the weight of the ewes probably average not far from 150 lbs., and the rams at least 200 lbs.

I have traced down the history of these sheep to the period of their comparatively recent emigration to the United States, although two or three importations of them, hereafter to be mentioned, were made about the beginning of the present century. But I cannot learn that all of the latter included more than a dozen living sheep on their arrival in this country. And it is probable either that these were soon mixed with the Spanish Merinos of the country, or else that they had not yet obtaind established characteristics differing sufficiently from those of the latter to found a separate family. At least no family, bearing any resemblance to the present French sheep, sprung from them.

Best Grain at the London Exhibition.—At the late meeting of the Bath and West of England Agricultural Society, Lord Portman, one of the jury on agricultural products at the International Exhibition, stated that the best oats were from Nova Scotia; the finest sample of wheat from Australia, weighing 68 lbs. 7 oz. per bushel; the best flour also came from Australia. He attributed the excellence of Australian wheat to the climate of that country. The grain from the Zollverein States of Germany, with that also from Hungary, in the Austrian department, was represented as remarkably good.

When the curious or impertinent would pick the lock of the heart, put the key of reserve in the inside.

The Farm.

Drainage.

BY C. B. CHAPMAN, M. D.

DRAINS, or under drains, serve a variety of purposes, and are constructed in different ways. They are mostly used for the purpose of removing surplus water, in order that land may be cultivated. While this is being accomplished, other purposes are very often unconsciously realized by the farmer.

A necessity for the removal of surplus water arises from a variety of sources, the principal of which are the presence of springs, or a subsoil which prevents the transmission of water, either upward or downward, with the facility demanded, in order to render the surface soil productive.

A soil composed mostly of clay may itself be sufficiently compact to demand the use of this means for the removal of water.

Clay is sometimes associated with small quantities of oxide or iron. Such stratum is often so compact as to prevent the transmission of water, nearly as effectually as the most solid rock.

Great advantage may be conferred in such cases by sinking shafts, or wells, to such depth as to reach a layer of gravel, into which water may be received, and thus conveyed away, or absorbed.

Drains are commonly placed at a depth of two and a half to five feet; and the purposes they serve, at these different depths, vary mostly in their degree of action; and their depth will also suggest the distance from each other at which they should be placed, for the influence of a drain will extend in accordance with its depth.

Such drains as may be useful for a considerable number of years, may be cheaply arranged by placing stones of four to six inches in diameter, along the sides of a trench, and laying slabs, or other cheap boards over them, leaving a space between the rows of stones, through which the water can flow.

An early method of constructing drains, was by placing branches of trees in the bottom of the trench, filling it to considerable depth, and covering the earth immediately upon them. Others placed small stones in the bottom of the trench, and covered them in the same manner.

This plan served the purpose of a stratum of gravel, though in a less degree. If these had been covered with flat stones, or plank, in order to prevent the packing of earth into the interstices, their utility would have been greatly prolonged.

A more recent method is by the use of earth baked like earthenware, which may be made of any form and diameter, and in sections of any length desired.

Drainage is mostly practiced for two purposes:

1. For the removal of surplus water from a locality, or from a soil; and,

2. For the purpose of bringing the materials of which a soil composed into such relation with atmosphere that *its* elements may contribute to the production of certain changes in the soil, and thus render it better fitted for the support of plants.

Those soils which demand this method for their improvement are mostly formed of clay, or contain a very large proportion of this material.

CLAY may be an essential ingredient of the surface soil, or, it may contribute to form a compact layer beneath the surface, and thus constitute a subsoil, which, from its compactness, may prevent the natural development of the plant by impeding the proper descent of their roots.

Such materials cannot long remain as a hard layer, after the water which it contains has been drained off, so as to admit the descent of the atmosphere; for this element is known to pervade, not only water in streams and lakes, whenever their surface is exposed, but also the earth to a considerable depth when it is not saturated with water, and when not consolidated into a hard layer.

The PROTOXIDE OF IRON, which is often an ingredient of such hard stratum, is not only injurious, when in union with clay, by rendering it more compact, but is always injurious to plants in any situation.

When such mixture is brought to the surface by the use of the plow, or when exposed to the atmosphere through the agency of so far removing water from the soil as to admit the access of air, the PROTOXIDE OF IRON, which is injurious to plants, by receiving an additional atom of oxygen from the atmosphere, is converted into a PEROXIDE, which is a necessary material for their support and growth.

Chemical changes in soils which contain either protoxide of iron, or lime, are greatly retarded by the presence of surplus water. Such changes may be either *promoted*, or *retarded*, by the presence of water, and this will be in accordance with its amount, and the nature of the soil, for some soils

are much more injuriously affected by drouth than others, and those lands which are most improved by frequent variation in the amount of water they contain, are those which are composed of lime, with clay, and a small quantity of iron.

Although the necessary action of oxygen upon a soil is prevented by an excess of water, some moisture is absolutely demanded for this purpose.

When a soil is too dry, its materials can not be brought sufficiently under the influence of chemical agencies to admit the necessary changes, although the amount of water vapor in the atmosphere even, is often sufficient for this purpose.

When a soil is rendered loose, by draining away the surplus water which it contains, the atmosphere will gain access to its particles, to considerable depth, and thus become an agency in affecting certain mechanical changes in its condition.

Such mechanical changes in a soil will admit of those necessary chemical changes which are secured only through the agency of the atmosphere. The process also admits the absorption, by the soil, of carbonic acid and ammonia, which are here stored up, in order to become food for plants.

Drainage not only induces changes in the inorganic materials in soils, but promotes the decomposition of organic matter; for too much water prevents these changes, and renders this kind of food for plants quite useless, as means for promoting their growth.

Water may serve as a necessary solvent of the various materials which are naturally destined as food for plants, or it may act injuriously, by washing them away, so as to place them beyond the reach of the plant.

Drainage does not deprive a soil of the necessary amount of moisture, for it increases the facilities for its circulation, and thus renders it the bearer of those substances which are required by plants, as well as fits them for their support.

The roots of most plants extend to a considerable distance through the soil, those of some extend along near the surface, and others penetrate downward several feet, many of them not less two or three.

A plant may grow luxuriantly through the early part of a season, and then droop, and fail to mature, and this because its roots have penetrated through a superficial soil, which has thus far furnished it with the necessary nutriment, but later in the season have penetrated to a layer of hard pan, or to some noxious ingredient, which by its poisonous qualities has arrested its development.

This often takes place when the remedy would be easy and effectual by the introduction of proper drains, so as to admit of the necessary chemical changes.

A dry season is not without its utility, both to the soil and to the plant, for the observing farmer has long been acquainted with the fact, that a good crop is likely to succeed to a dry season.

The principal source of this utility is in the condensation of ammonia and of carbonic acid in the pores of such soils as are not already occupied by water; for although water is a good absorbent of ammonia, its office for this purpose is much better accomplished when in an attenuated condition, as in the form of vapor, or of snow-flakes.

The circulation of water through a soil is indispensable to render it available as a means of conveying nutriment to plants, and this, (like the circulation of the blood in animals,) does not so much depend upon its quantity, as upon the means which are provided for its transmission.

The genial shower is of little, or of no use, to a soil, when it is already occupied by water which it can not displace; and those valuable constituents which are brought down from the atmosphere, are thus carried away by the surface flow of water.

Cultivation of Winter Wheat.

ESSAY, BY JOHN S. GESNER, CANADA WEST.

The writer's experience in the cultivation of winter wheat extends over sixteen years upon loamy clay, and four years upon sandy land. I shall give it just as I would *talk* it.

DRAINAGE.

It is absolutely necessary to ensure a good crop that the land be thoroughly drained—underdraining, if done properly, is without doubt the best; but open or surface draining is the most common, and is that upon which my experience has been formed. I think that a field cannot be too well drained, not only after it is sown, but previously—and that extra labor in clearing out and keeping clear every ditch, and digging large outlets, is amply rewarded by the extra yield.

SOIL.

A loamy clay I consider the best for wheat. I would prefer four or five inches of loam, with clay subsoil. This I always

summer fallow—plow in May, deep as I can, putting on two teams if one will not turn it deep enough, harrow well, cross plow in June, in July cultivate with a two-horse *cultivator* or *scrabbler*. The latter part of August manure well, and immediately plow again in 11-foot ridges, cutting narrow, deep furrows.

If the soil be light and sandy, I would summer fallow only in case of a new or weedy piece of land, which I intended to seed down. My way is to turn under a good crop of clover about the middle of June. The clover may be fed off until nearly the first of June, at which time sow about two bushels of gypsum (plaster) per acre. This will give the clover a good growth, and will be of service to the coming wheat. Plow in the clover deeply; a piece of chain about 3 feet long fastened to the coulter of the plow so as to drag in the furrow, will be found of service in helping to turn under the clover. Manure well, and use the two-horse cultivator thoroughly about the last of August, and you have a good seed-bed.

VARIETIES.

My favorite kind of wheat is a bearded variety, known as the "Kentucky White," or "Hutchinson's." I know that bald varieties, such as "Blue Stem," "Soule's" and "White Flint" will, not damaged by insects or rust, yield the most per acre, but owing to the midge (see *Insects*), I much prefer bearded varieties. Take the earliest, best and cleanest wheat you can get for seed. Depend upon it, dirty seed will bring a dirty crop—I don't believe that wheat will turn to chess.

If anything should prevent early sowing, I would then sow "Mediterranean," because it will mature here quicker than any other variety, which is quite an item in late sowing. Treatment of seed is the same upon either clayey or sandy soils.

TIME OF SOWING.

The last week in August and first week in September I have found the best time for sowing. In this section sowing later is useless, unless you sow "Mediterranean." Should the weather be very growing, and the wheat getting too much top to stand the deep snows, turn on your stock and feed it off. There is no danger in pasturing wheat moderately, if your land is well drained. In fact, I think it does it good by enriching the soil. The plants should not be nipped close to the ground—but moderately pastured, so as to reduce the tops of the plants to enable them to winter safely.

MODE OF SOWING.

I sow "broadcast," and use a half bushel measure to sow out of. Take a strap, pass it through one of the handles of the measure, (or a hole made for the purpose), and unite the two ends so that when it goes over the neck, the measure will be convenient to dip the right hand into. You can thus always know exactly how much seed you are using per acre. On a ridge 11 feet wide, I go and return upon the same ridge. Place the seed in bags in the most convenient places upon the field. A little practice will enable any person to sow quickly and evenly.

QUALITY OF SEED, ETC.

I have found 1½ bushels per acre enough, when sown early; if sown late, (Mediterranean) I would sow two bushels per acre. I have tried brining the seed, liming it, and various highly recommended decoctions, but never realized any benefit from their use. Sow good clean seed, and it need only to be covered with good earth. Dibbling and drilling in the seed does very well when only a small quantity is sown, and you wish to obtain as much from the amount of seed sown as possible; but when much ground is sown I decidedly prefer broadcast sowing, notwithstanding a larger amount of seed is used. Drilling in wheat and then hoeing it afterwards, does exceedingly well in theory, but does not succeed so well in practice; every thing must be done nearly right to enable you to hoe without hoeing up your wheat. In fact, when the wheat crop is the main crop of the farm, and much has to depend upon *hired* labor, the simpler and the stronger the working implements are, the better. We raise wheat *to pay*, and if we do not raise as much per acre, if the *profit* is more, the better for us.

HARROWING AND ROLLING.

After sowing, harrow thoroughly—you cannot harrow too much,—and put on a good heavy roller. The land is then ready for furrowing for surface draining. I have found it a good plan to roll wheat also in the Spring, as soon as the frost is out of the ground—particularly upon land that the frost has hoven much. It presses many roots into the ground, which would otherwise be killed by the sun. I have also found it a good plan upon a piece of wheat that has suffered much from the action of Jack Frost, but has clumps of wheat still

left, to run over it twice in the Spring with a light harrow, and then roll with a heavy roller. It divides the remaining roots, and although *hard looking* at first, the growing crop will soon astonish you with a change for the better. I do not believe in sowing "plaster" in the Spring upon wheat. Plaster should be used, if at all, upon the crop which precedes the wheat. If I thought my land was not rich enough in the Spring, I would top-dress with either stable manure or guano; but I prefer to have the land rich enough before the wheat is sown.

HARVESTING.

I always let wheat intended for seed get *dead ripe;* the rest I would commence cutting before the grain is quite hard. If too green, it makes dirty and heavy work; but when you have a good deal to cut, you had better cut some of it a little green, than lose by its getting too ripe. Bearded varieties always shell very much when dead ripe. If care is used, however, in handling, not so much is lost by shelling as one would at first suppose. When wheat ripens from the *head downwards*, you can cut very green without danger of shrinking. I do not, like some wheat-growers, say that wheat is better and plumper cut green, for it is my belief that every crop should come to maturity before harvesting.

Never bind too large. Have the sheaves of moderate and uniform size. Rake thoroughly, as it is very easy to leave enough to pay for cutting and binding upon the ground. In *getting up* or *shocking*, I always set 10 or 12 sheaves together in a row, 5 or 6 on each side; I never cap my shocks. If carefully set up, they will stand; and in case of rain, will dry quicker without caps. We often have what is here called *catching* weather—and often grain is damaged. It is therefore the safest to house or stack as the grain is fit.

THRASHING, CLEANING AND MARKETING.

Now that horse power thrashing machines are so easily obtained, the old-fashioned way of thrashing with the "flail," or with horses upon a large floor, is mostly done away with, and the new-fashioned machines are a great advantage to the farmer. I think, however, that wheat for seed is better if thrashed with the flail, and would always prefer it to that thrashed with a cylinder at great speed, which I believe injures many of the grains; perhaps not enough to prevent their growing, but enough to prevent the plant from being as hardy as though the grain were perfectly sound. It is a farmer's duty to clean not only his wheat for seed and bread, but every bushel he sells, thoroughly. On account of the carelessness of too many farmers in this respect, our market for wheat is injured very much. In marketing, as a general rule for at least this section of the country, it is better to sell in the Fall; you save all that would be lost during the Winter by mice, rats, etc., and have the use of the proceeds sooner. Much, however, depends upon circumstances, and a man must use his judgment in the matter; for it often happens that wheat is low in the Fall, with every prospect of being much higher in the Spring. In such case hold on to the grain; but if a good price is offered in the Fall, sell it.

INJURIOUS INSECTS, RUST, ETC.

Under this head I shall be very brief, for learned men have written much upon the subject, which every farmer ought to read. To those who have not, I would say, by all means read the works of Dr. Fitch, of New-York, upon the insects injurious to vegetation. The wheat fly or "midge" does a great deal of damage to late-sown wheat, and is much worse upon bald, than upon bearded varieties. For this reason I always sow bearded varieties. In my opinion the only remedy for the midge is—*to drain well—manure well*, sow early, and sow an early kind of hardy, bearded wheat. In every case where I have done this, I have escaped the ravages of the "midge,"—while my neighbors who have done otherwise have suffered very much. I examined this season a field sown very late, with "Mediterranean," the seed of which was mixed with old "red-chaff" (bald). Every head of the bald was completely destroyed by the midge, while the bearded was but little injured; and I firmly believe that in sowing late, mixing in a portion of bald wheat seed would preserve the bearded variety from the "midge." If the wolf (or grain weevil) attacks the wheat, (which it seldom does here, to any extent,) I would thrash out as soon as possible. If any insects survive the thrashing cylinder, I would spread out the grain to the sun, when they will all vanish.

The wire worm is the curse of wheat-growing here. As yet I think no certain remedy for this pest has been found. The best remedy I have tried is frequent plowing and harrowing, both in Spring and Fall, disturbing them as much as possible, never allowing a field to remain too long in sod.

Old pastures or meadows are complete nurseries for wire worms. But above all things, cultivate an intimacy with birds. Not only wire worms and "midge," but all kinds of insects injurious to the farmer, are destroyed in countless numbers by the birds; and until we encourage in every practicable way the presence of birds, we may expect to suffer.

I believe rust, like mildew, is caused by exhalations which arise from the ground, with damp fogs, and stimulate the growth of the plant to such an extent as to cause the rust to appear; and I further believe that thorough draining, good cultivation, with the use of hardy varieties, early sown, are the best preventives. Where lands are rich in ammonia, the straw will be ranker and much later. I should in such cases sow about two bushels of salt per acre just before any danger of rust.

In conclusion I would say that I consider 35 bushels per acre a fair crop. If every thing is right, more per acre will grow; and I have no doubt that the day is not far distant when, wheat-growing having become more of a science, 50 and 60 bushels per acre will be called an average crop. There is one thing I am convinced of, and that is, that in spite of all known injurious insects, wheat can, under proper management, be grown to pay the farmer, and pay well, too. I think the onslaught of the insect tribe upon the wheat will result in good, by bringing about a much better system of farming, which otherwise would never have been attained.—*Am. Agriculturist.*

Remedy for the Turnip Fly.

Mr. E. G. O'Brien of Shanty Bay, near Barrie, informs us that he has for several years used the following prescription to prevent the ravages of the turnip fly, and on each occasion the plant has escaped injury, an exemption which he imputes to the effects of the preparation. Oil of turpentine, one teaspoonful to 1 lb of seed, stirred till the oil is absorbed, and the seed held between the eye and the light will have a shining, glistening appearance. The seed should then be immediately sown. Several of Mr. O'Briens neighbors have used the same remedy and always with the same successful result, which they attribute to the odor or some other property of the oil. It is the oil, not the spirits of turpentine, which is used, and which may be got of any druggist. The writer of this paragraph has on several occasions used fish oil in a similar way, and always with favorable results, but whether the safety of the plant was due to his prescription, or to some other favoring circumstance, he could not feel very confident.—*Canadian Agriculturist.*

The Grain Aphis.

Last year there was great complaint in some of the Eastern States, of an aphis upon the wheat. From recent notices which we have seen in local papers, we fear this pest is making a visit to the wheat fields of Ohio this year. For some years past, the wheat fields of Illinois and other Western States have been sorely troubled by the chinch bug. We suppose the two are distinct and different, inasmuch as the aphis is a soft green louse, while the chinch bug is like a small red bed bug. The paragraph which follows is from the Ravenna (*Portage Co.*) *Democrat:*

WHEAT INSECT.—E. B. BABCOCK, of Shalersville, exhibited at this office, on Saturday, heads of wheat full of a new kind of insect that is infecting and destroying wheat fields in his vicinity. The insect is louse shaped, but Mr. Babcock thinks it a species of bug. We see by the Pittsburg Dispatch, the same kind of an insect is found in the wheat in that vicinity.

And the following is from J. M. Edwards, Esq., of Canfield, to the Youngstown, (*Mahoning Co.*) *Register:*

CHINCH BUG.—One day last week we were shown some heads of wheat, said to have been gathered near the west line of Youngstown township, in which we observed a large number of small insects somewhat resembling the green lice we frequently see on rose-bushes, &c. Some of these insects were green, others of a dark hue, almost black. Those who have seen the animal before, pronounced it the chinch bug, of which we have heard and read so often, but have never before seen, and were not aware of its being an inhabitant of this section of country. In how extensive numbers they are appearing we have not learned, but the gentleman who showed us the specimen, JOHN SHIELDS, Esq., of Coitsville, says that when picked, the heads were quite full theo f insects. We have since seen a gentleman from Springfield, who says that small insects resembling green lice have appeared among the wheat there. We presume it is the same insect. We do not learn that they have done much damage as yet. The ears of wheat we saw were injured in the grains.

The Garden.

SPIRÆA LANCEOLATA.

For the Ohio Cultivator.

The Spiræa.

Among the many flowering shrubs that embellish the spring and early summer months, none are more desirable or worthy of prominence than the spiræas.

These elegant shrubs are of the easiest culture, requiring no particular soil, blooming from early spring to midsummer, and suited alike to the flower border, the lawn, or the shrubbery.

The following are varieties of established merit, and will afford a nice selection.—Several may now be seen in bloom in our grounds.

Billardi.—A low bush of very erect neat habit, flowers bright rose color, produced in terminal spikes, first at the extremities of the branches, afterwards in the axils of the upper leaves; continues long in bloom. 3 ft.

Callossa—*Chinese Pink Panicled*—Foliage neat and pretty, young leaves are reddish, flowers rich purplish red, in large corymbs, blooms through July; this is one of the very finest, and when better known will be regarded as indespensible in the smallest collection. 4 ft.

Douglassii—*Douglas' Fine Red*—Elegant foliage, beautiful, deep rose colored flowers, in dense plumes, blooms late in the season. 2 to 3 ft.

Lanceolata—*Lance Leaved, or Garland Spiræa*—Slender spreading branches and long narrow foliage.

The flowers are single, borne in clusters 2 or 3 inches in diameter, and produced on lateral shoots the whole length of its graceful arching stems, pure white. May and June.

Obovata—*Obovate Leaved*—Small and glossy toothed leaves, flowers white in small spikes. July and Aug.

Prunifolia—*Plum Leaved Spiræa*—Very neat and pretty bush, covered in early spring with beautiful small pure white blossoms, double as a daisy, foliage rich glossy green through summer, gradually changing at the approach of autumn, assuming the most brilliant tints, red, scarlet and golden. One of the earliest and most desirable species of the whole family. 4 ft.

Salicifolia—Brideswort—*Queen of the Meadows*—Slender branching shrub, with a profusion of long narrow willow like foliage with terminal heads of neat white rose tinted flowers, retains its leaves and verdure late in autumn. June and July.

Thalictroides—*Meadow Rue Leaved*—Slender spreading branches, covered with clusters of small white flowers. May.

Ulmifolia—*Elm leaved Spiræa*—Branches strong, erect, leaves oval oblong, flowers white, with long stamens produced in pyramidal clusters, on lateral shoots 6 or 8 inches long, on the entire length of last years wood. June.

Sorbifolia—*Primate Leaved Spiræ*—Strong grower, very pretty primate foliage which it puts forth early in the spring; flowers yellowish white, produced in large pyramidal open cluster in June. It is inclined to sucker, otherwise it would be very desirable.

A. G. HANFORD.

Columbus Nursery, July 1862.

When you forgive the man who has pierced your heart, he stands to you in the relation of the sea worm that perforates the shell of the muscle, which straightway closes the wound with a pearl.

Raspberries.

After Strawberries, these are the most excellent of the small fruits. But their culture, especially that of the hardy native varieties, is quite simple and easy. The Raspberry is well adapted to those who have not sufficient ground to cultivate the larger fruits. They are exceedingly wholesome and refreshing, not being liable to undergo the acid fermentation in the stomach. Raspberries also come in very seasonably between the Strawberries and Lawton Blackberries, so that these three kinds of small fruit form an unbroken succession until the larger fruits appear on the table. Each one is a favorite in its turn when neither of the others can be had. When Raspberries are abundant, they may be used in many different ways besides their use as a fresh dessert fruit. For jams, jellies, preserves and tarts, they are very fine, and they are also excellent when they are either dried, or put up in cans for winter use.

There are many varieties of this fruit differing considerably in form, size and flavor. In color thep are light yellow, black and various shades of red. The foreign varieties and the seedling sorts produced from them generally bear much larger and more luscious and beautiful fruit than that of our native varieties. But unfortunately they are mostly too tender to endure our climate without some winter protection.

The most valuable of this class are the Red and the White Antwerps, Franconia, Fastolf, Orange, Cushing and French. They should be planted in stools three feet apart, and the rows should be kept clean by constant culture. All the suckers that spring up should be regarded as so many robbers of the fruiting canes, and they should all be cut off as they appear, except such as are needed for the next season's fruit, or for new plantations. In the fall they must be pruned by cutting away all the old wood that has borne the crop of the past summer, by thinning out all the new canes except four to each stool, and by cutting off about one foot of the weak and immature wood from their tops. The canes, so pruned about the first of November, must be laid carefully down flat upon the ground in the direction of the rows, and be covered over two or three inches deep with soil from between the rows. In the Spring, when all danger of severe frosts is over, the canes are to be uncovered and tied up to stakes or to a trellis. A mulching of spent tanbark, leaves, or other litter is very useful when spread over the roots on the approach of hot and dry weather.

Those who either cannot find time for this culture, or who are offended at the labor of producing these fine varieties, must either buy them of others at a high price, or else be content with our native varieties, which, with easier and simpler culture will produce large retnrns of excellent fruit. Of these we will name the common or wild Blackcap, the American Yellow, Doolittle's Improved Blackcap, Ohio everbearing and Catawissa. These are all distinguished from the shorter wood of the foreign kinds by their long and vine-like canes, which form new plants, not by suckers, but by the tips of the branches rooting wherever they touch the ground. In making a planting of Blackcaps from the fields, you should carefully select only such young plants as have rooted the previous season, and which, having never borne fruit, are both young and vigorous. They should also be taken from none but such parent stools as are known to have borne abundance of excellent fruit; for of those gathered promiscuously a larger portion will be unworthy of cultivation. This the writer can testify from his own experience. But with a proper selection and culture, success with these is certain.

The surest way is to plant Doolittle's Improved Blackcap. This is a new seedling variety raised from the common kind, equally hardy and producing larger fruit and better crops than most of those that can be got from the woods.

The Ohio Everbearing and Catawissa are also seedlings from native varieties, but distinguished by the habit of producing fruit both at the usual season and also during the the Fall until severe frosts; thus greatly prolonging the season during which this fine fruit can be enjoyed.

The planting, pruning and culture may be the same as for the foreign varieties, excepting the tying to stakes and the trouble of Winter protection. J. E. A.

—*Guernsey Times.*

To Raise Giant Asparagus.

Mr. Downing, in one of the early volumes of the *Horticulturist*, tells how to grow common asparagus, so that it will always rival any giant production. He says: Every one who has seen my beds, has begged me for the seed—thinking it a new sort—but I have pointed to the *manure heap* (the farmer's best bank), and told them that the secret all lay there. The

seed was only such as might be had in every garden. About the 1st of November—as soon as the frost has well blackened the asparagus tops—I take a scythe, and mow all close down to the surface of the bed; let it lie a day or two, then set fire to the heap of stalks; burn it to ashes, and spread the ashes over the surface of the bed. I then go to my barn-yard; I take a load of clean, fresh stable manure, and add thereto half a bushel of hen dung; turning over and mixing the whole together throughout. This makes a pretty powerful compost. I apply one such load to every twenty feet in length of my asparagus beds, which are six feet wide. With a strong three-pronged *spud*, or fork, I dig this dressing under. The whole is now left for the winter. In the spring, as early as possible, I turn the top of the bed over lightly, once more. Now, as the asparagus grows naturally on the side of the ocean, and loves salt water, I give it an annual supply of its favorite condiment. I cover the surface of the bed about a quarter of an inch thick with fine packing salt; it is not too much. As the spring rains come down it gradually dissolves. Not a weed will appear during the whole season. Everything else—pig-weed, chick-weed, purslane—all refuse to grow on the top of my briny asparagus beds. But it would do your eyes good to see the strong, stout, tender stalks of the vegetable itself, pushing through the surface early in the season. I do not at all stretch a point, when I say that they are often as large round as my hoe-handle, and as tender and succulent as any I ever tasted. The same round of treatment is given to my bed every year.

Remedy for the Apple-tree Borer.—On visiting the farm of Mr. Kenrick, of Dover, Mass., a few days since, our attention was attracted to one of the finest apple orchards that we have ever seen of its age—ten years from the nursery. Noticing the freedom of the trees from the borer, we aked Mr. K. what mode he adopted to keep off that insect. He stated that he kept the ground under cultivation, generally planting it to potatoes, and at the last hoeing—the last of June or the first of July—he had a mound of earth raised around each tree, to the height of seven or eight inches. When the beetle comes to tree to deposit its eggs, it places them on the bark just at the surface of earth, not being able to get at the tree nearer the roots. In the fall the earth which had been drawn round the tree is hauled away, leaving the part attacked by the borer in plain sight, and as the larva have made but a slight entrance, they are easily destoyed. —*Boston Cultivator.*

Room for Ripening Fruit.

PROF. MAPES AT N. Y. FARMER'S CLUB.

The best place to arrest ripening is a dark room, fairly ventilated, and four or five degrees above the freezing point—if lower the quality will not be as good. In an ice-house the air is too cold. A room with an ice-box placed near the ceiling, constantly supplied with ice, and having an opening to admit a current of air above the ice is what is wanted. The room itself should be double in its sides, floor and ceiling, as a confined space of air is the best known non-conductor.—The amount of ice used under this arrangement will be no greater, indeed less, than by depositing fruit in an ordinary ice-house, as in any case the temperature of the fruit can only be lowered at the expense of the ice. No mistake is more common than that of placing ice at the bottom instead of the top of a refrigerator or room, to be cooled. The doors and windows should be double, and the windows darkened, except when light is positively necessary. With such an arrangement, pears may be kept if picked at the proper time and carefully handled, until the proper dates for ripening, and then by removing them to a ripening closet, at a temperature of 100° Fahrenheit, they will ripen in four days or less, and if kept dark during the ripening, the color will be materially improved, often showing a blush, which they will not have if ripened in the light.

The detention room would be invaluable to the growers of fruits generally. Even apples when treated as above described, are far more juicy and palatable than when treated in the ordinary manner. Small fruits as picked, should be placed in the detention room, and when reduced in temperature to from 36° to 40°, they may be carried to market in finer order than as ordinarily treated. Such a room in the earlier part of Summer may be used as a general refrigerator for butter, meats, etc., but when used for fruits, all other matters should be excluded, and above all, it should be kept perfectly clean.

Happiness—a blesssing often missed by those who run after pleasure, and generally found by those who suffer pleasure to run after them.

Veterinary.

For the Ohio Cultivator.

The Action of Medicines on Horses.

Nitrate of Potassa (i. e. salt petre) is a febrifuge, (a medicine which possesses the property of abating or driving away fevers), and diuretic, (diuretics has the power of increasing the secretion of urine; they act by producing a discharge of the watery parts of the blood; and by such discharge indirectly promote absorption over the whole system.)

The dose may be from two drachms to four drachms. In order to obtain the full effect of the first action, it should be exhibited in the form of ball, so that it may undergo a solution in the stomach; but as a diuretic it is best given in solution. It passes to the kidneys unchanged, promotes the secretions of urine and sweat, lessens the heat of the body and the frequency of the pulse, and has a tendency to keep the bowels in a soluble condition. In catarrh or cold it is a useful remedy; and in troublesome coughs it often gives relief. In large doses it is apt to irritate the stomach and do mischief; therefore in urgent cases, half an ounce may be given every third or fourth hour, in which way there will be less danger of its producing that effect. Even in this dose, it should not be continued beyond a single day, as it might greatly irritate the urinary organs.

This medicine judiciously administered, possesses a cooling and diuretic property, which renders it extremely useful in fevers and all inflammatory complaints.

Chloride of Sodium (i. e. common salt,) is an invaluable tonic and alterative. It may be given in doses of from one to two ounces. Urgently stimulates the stomach and alimentary tube, thus increasing the powers of the digestive organs, by which the tonicity of the system is restored.

When a horse is recovering from sickness, and the natural sanitary stimulus of wholesome food will produce a more certain as well as a safer impulse to the discharge of the natural functions than any medicine can afford, a little salt water sprinkled on the food, will be an admirable excitant; in fact it appears to be the natural stimulus to the digestive organs of all animals.

As a purgative, it is second only to epsom salts, being a tonic as well as a purgative. It is on this account, perhaps somewhat objectionable in the early stages of fever.

Externally applied, dissolved in water in the proportion of one pound to a gallon, it is valuable as a stimulant in chronic sprains; at least, I am inclined to believe this to be its general action; although while undergoing solution, the temperature of the water is lowered, yet rarely is it the case that only during this time it is employed; but the solution is kept in the stable until it acquires the same temperature as the air of the stable, and then being applied it becomes a stimulus. If made use of only when the heat of the water is being abstracted, so as to cause the salt to pass from the state of solid to that of liquid, it would of course, be a refrigerant. Here is seen the value of an application of the principle of chemical science to medicine. T. Webb, V. S.

Zanesville, Ohio.

Foot-Rot in Sheep.

John Johnston. the well known farmer of Geneva N. Y. tells the Boston Cultivator how to cure foot-rot in sheep:

Take finely-pulverized blue vitriol—the finer the better—make it into a salve with lard, butter, or honey. After cutting away every particle of the hoof that has become detached by suppuration,—if some blood is drawn no injury will result from it,—apply the salve freely, and I will warrant that in less than five days the sheep will be sound, provided the detached hoof has all been cut off. But it is safer to apply the salve at different times, say two or three, at intervals of four or six days, examining carefully at each application to see that none of the detached hoofs is left on the foot. To cut this entirely away is indispensable.

The best way I have fouud to pulverize the vitriol, is to hang up an iron pot by a rope or chain, put in a half a pound of vitriol; then put in a canon ball, and take hold of the pot with both hands, and give it such a motion as will cause the ball to roll on the

the vitriol, and it will soon become pulverized. The vitriol will require to be loosened up from the bottom of the pot once or twice.

No better cure for foot-rot need be desired than this, provided the application be thorough; but if the land is wet, or foot-rotten sheep have been pastured on it long, it will be safer to remove the sheep as fast as they are cured, because the foul land will again inoculate them.

The Garden.

Production of Seedling Strawberries.

BY A. S. FULLER, BROOKLYN, N. Y.

In attempting to produce a new variety of strawberries from seed, it should first be decided what are the qualities desired, and then, by selecting two varieties that possess these qualities as near as may be, and by fertilizing one with the other, we can come nearer to the object in view than we should by sowing seed collected indiscriminately from varieties not properly fertilized.

For instance, let us take the Wilson, which is very prolific, quite large, and firm, but is rather acid, and too dark color, with a calyx that does not part readily from the berry, and the Peabody, which is not prolific, though large, and is of superior color, and sweet, and has a calyx that parts readily.

Now, let us place these varieties at some distance from other varieties, but in close proximity to each other, so that they can be the more readily operated upon. When they come into bloom we remove the stamens from as many flowers as desired, and then with a fine camel's hair pencil take the pollen from the other variety, and dust it over the pistils of the flower from which the stamens have been removed. It is well to place a fine netting over the plant operated upon, to prevent insects from fertilizing it with pollen from inferior varieties.

The flowers should have the pollen applied several times, a few hours between each application so that the fertilization shall be complete. It is well to use both varieties as parents, and fertilize the Wilson with the Peabody, ahd vice versa, as it cannot be determined which will produce the best until proved by actual experiment. I do not mention the Wilson and Peabody believing them the best to raise seedlings from, but only to illustrate the principle. From my own experiments with them I have been somewhat disappointed, for nine-tenths of the seedlings from the Wilson fertilized by the Peabody were more acid than the parent, although I succeeded in getting the color, and some of the other characteristics of the Peabody. But using the Peabody as the parent, I have had better success—getting a better colored berry, sweeter, and some plants that were quite prolific, with almost invariably the long-neck, which is a peculiar characteristic of the Peabody.

Among two varieties of the same species, or two distinct species (unless too far removed, like the Alpine, which I believe will not hybridize with any of the others), may be brought together and valuable varieties grown from the mixture.

But it must be remembered that the varieties now in cultivation have been so mixed and cross-fertilized that it is almost impossible to get a true cross between any two varieties.

The effect of fertilization of previous generations will sometimes show itself when and where least expected. Sometimes the best results will be obtained by merely sowing seeds of any good variety, trusting to its inherent good qualities being transmitted to the offspring.

From the Austin I have got seedlings all of which resembled the parent, but were inferior; and I have noticed that all of this class, such as Downer, Iowa, Charlton, Georgia Mammoth, &c., are very likely to produce varieties no better than the wild Western berry from which they evidently all originated. It is very easy to get a large variety from this class, but seldom a good one. From the Bicton Pine I have grown large, sweet orange-colored fruit, but, like the parent, unproductive.

From the Oscar, which is a poor grower, I have produced fine growers, and those that were moderately prolific; but the fruit was sweet and dry.

The results of some of my experiments are exceedingly curious, such as producing five distinct varieties from the Bartlett, all of which had entire leaves, not lobed. They were very similar to those described by Duchesne as raised by him at Versailles in 1791, and called the Monophylla, it being just 100 years (so far as I have been able to learn) since the first one-leaved strawberry was grown until the second was fruited by me in 1861. But neither were of any value, except as a botanical curiosity.

From the Iowa I produced a five-leaved variety, and one with leaves having a beau-

tiful silver stripe, but of no value to the cultivator.

How to Raise Seedlings.—When the berries from which we wish to grow seedlings are ripe, they should be marked and mixed with dry sand, so thoroughly that no two seeds shall remain together, putting sufficient sand to absorb all the moisture. Then sow the sand containing the seeds in a bed previously prepared in some half shady place, or under glass; sift on some fine mold, covering the seeds about an eighth of an inch deep. If the soil is kept moist, the plants will begin to appear in about four weeks, and will continue to come up until cold weather; at which time they should be covered lightly with straw, say one inch deep. The plants should be set the following Spring, 18 inches apart, in rows, at least two feet apart.

Stop all runners every week throughout the season, and keep the beds clean. The second year after transplanting, you will have fruit. Mark sexes of each as they come into blossom. As the fruits ripens, mark the time and character, and select the very best and destroy all other plants. Lift carefully those that are to be preserved and put them into new beds where they will have more room to make runners. The correct estimate of the value of any new variety cannot be ascertained until it has fruited two or three years. For my own part, I shall never save a pistillate, although I have done so heretofore extensively, for the purpose of ascertaining by actual experiment whether they were any more likely to be better, or more productive than the bisexual varieties.

The result of some of the largest experiments which I have tried are, that out of several hundred seedlings of 1856 none were good, although sown from the best seed that I could obtain. In 1859 I raised another large quantity. Being more careful in selecting the varieties and in their fertilization, the result was a thousand different varieties. There were sixty pistillates, one staminate, which produced no fruit, and the remainder bisexual or hermaphrodite.

Out of this number I have three varieties that have fruited three years, that I think worthy of being cultivated. From two hundred seedlings of 1860, fruited two years, I shall keep two for further trial.

To those who may think this a tedious undertaking, I would say that no one should undertake to produce new and improved varieties of fruits and flowers, it isto be looked upon as labor. It should be made a pleasant pastime.

Aloes for Squash Bugs.—Probably the most effectual, while it is the most easy remedy for the little pests that eat up our vines, is water made intensely bitter with aloes—say two ounces to a gallon. This may be put upon the vines with a fine rose-jet watering pot; or, better still, with a rose nozzle syringe. It has been applied successfully in France and England, and to some extent in this country. It is said that it will also repel rose bugs, and the green slungs that destroy roses and grapes. If it will keep the striped bugs off the squash and mel on vines, it will be an invaluable remedy, and not an expensive one.

Remedy for Bites and Stings.—As many of our readers are preparing to travel or go to the country for the summer, it may be useful to remind them that an ounce vial of spirits of hartshorn should be considered one of the indispensables, as in case of being bitten or stung by any poisonous animal or insect, the immediate and free application of this alkali as a wash to the part bitten, gives instant, perfect and permanent relief, the bite of a mad dog (we believe) not excepted; so will strong ashes-water.—*Hall's Journal of Health.*

How to Make Vinegar.

Fill nearly full any vessel, jug, crock, pan, tub, or barrel, with pure rain or soft water. Sweeten it with any kind of molasses (the quanity is uot material), set in a moderately warm place or in the sun, cover with a sieve, gauze, or net, to keep out flies or gnats. In due process of time it will be vinegar, when it must be put into a suitable vessel and kept close. To convert cider into vinegar—if made from sweet apples, it is only necessary to set the barrel in a warm place and knock out the bung; Stir in a little molasses, and when sour enough bung up tight. Vinegar barrels should be well painted, as they are liable to be eaten by worms.

It will be proper to state that it is the atmosphere, which in time converts the sweetened water to vinegar, hence the greater the surface of water exposed to its influence the sooner it will sour. There is a thick scum rises on the top of the vinegar when making, which is the "mother" and should not be thrown away.

The Coming State Fair.

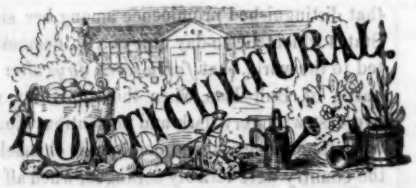
Reasons for holding a Fair.—The INDUSTRY and intelligence of a State or nation not only mark its absolute status in the scale of civilization, but its progress in these is the proudest monument it can rear. It requires intelligence to invent, and the amount or character of the inventions of any State or nation are infallible criteria of the intelligence of that State, as well as an exponent of the specialties or special branches of industry to which that particular State is devoted.

At a State Fair, there is an exhibition of the intelligence and inventive genius of the State. There are other departments of industry aside from mere machinery or implements, in which the intelligence of a State may be manifested. Intelligence is just as manifest in the production and improvement of the several races of cattle, horses, sheep, swine and poultry, as it is in a reaping and mowing machine. It is just as manifest in needle-work productions, or in the improvement of garden vegetables, fruits and flowers, as it is in the steam engine. The State Fair, then, should be encouraged and patronized by all who have the advancement of the material interests and intelligence of the State at heart. Let every one who possibly can, come to the next State Fair, and mark the progress in machinery, in the adaptation of inanimate matter to the purposes of industrial pursuits, and consequently, the comfort and well being of mankind and womankind, made since the last State Fair was held in this city, in the autumn of 1856.

Why a Fair, and a successful one, should be held this year.—Ohio was one of the four States which last year held a State Fair, and of these four States, Ohio was the only one which held an exhibition that was successful in every respect. The *moral* effect of the financial and otherwise legitimate success of the State Fair of 1861, has contributed in a very great degree to give Ohio that distinguished prominence among her sister States which she to-day enjoys. It demonstrated to the world, that *forty-seven days* after the battle of Bull Run, when the social sky was overcast with very dark and portentious clouds, when the commercial and merchantile channels of the country were terribly deranged, when all the departments of industry were interrupted, and more than all, when nearly 80,000 of her hardy sons of toil were on the battle field or in the camps of instruction, yet, notwithstanding all these gloomy surroundings, the great exhibition of the material resources and industry of the State, did not suffer in comparison with former similar exhibitions, either in the quantity or quality of articles exhibited, or in numbers of persons who visited the Fair. Is it less important to convince the world of the vast agricultural and other industrial resources of the material wealth of the State in 1862 than it was in 1861? Is it not rather of infinitely greater importance for the world to know that Ohio can send 90,000 men into the field, and contribute her quota of two drafts of 300,000 each, and yet leave the great motive power of her industrial resources unimpaired? Surely this *can* be done, and will be done, if the results are properly appreciated by the community.

Can people afford to attend a State Fair this year?—Yes, certainly; why not? There is no more time lost in attending a Fair than there is to attend any other social reunion. And as for money, it is cheaper and more abundant in the regular channels of trade at the present time, than it has been since 1857. It would argue a parsimoniousness, which we are unwilling to believe exists among the citizens of this goodly State were they to deny themselves the gratification of a visit to Cleveland, and the Fair, at half the usual railroad rates of fare; more especially since the crops of all kinds have been proved to be most unprecedently generous and of good quality.

THE NAOMI RASPBERRY.—Several weeks ago Mr Elliott handed us a basket of the Naomi raspberry from the garden of Mrs. Gov. Wood, so much commended by Mrs. Gage, in another column of this paper. This fruit is as long as an ordinary blackberry, full fleshed, with a small core, and a positive vinous flavor, delicious when fully ripe. To the class of red raspberries, we should say, this will be as much of an acquisition as the Lawton is to the family of blackberries.



New Rochelle Blackberry.

The productiveness of this variety of blackberry was never so enormous, we believe, as it is the present season. Indeed, the canes are a downright curiosity to behold. When we consider the ease with which this fruit can be grown, the low price at which the canes can be obtained, as well as the truly delicious quality of the fruit, it is surprising that everybody who has a little ground, has not a row of them. But this could be soon accomplished, if those who cultivate the fruit would distribute among their neighbors the surplus canes, instead of digging them out and throwing them away, as some do who regard any neighborly kindness requiring a little personal labor as a bore, not to be submitted to. The second year and after, the plants multiply in most cases numerously.—*Germantown Telegraph.*

Transplanting Strawberries.

It is generally conceded that late summer, or early fall planting, is better than spring, for the reason that the plants will generally produce a good crop of fruit the next season; whereas, if planted in the spring, they will not produce either a full crop or perfect fruit the same season. If the summer or fall planting is preferred, the next question which arises is, in what particular part of the season can the transfer be made with the least injury to the plant, and insure the largest quantity, and the best quality of fruit?

The strawberry plant is very tenacious of life and can be transplanted with certainty of success at almost any time, from March to November; but in our opinion, the proper time for such process is, during the first rains after the fruiting season, say the latter part of July and August. But it would he better to defer it until even the latter part of September, than to risk the effect of dry ground and dry weather upon them—in fact, we have known them to be transferred as late as November, and succeed well; but it s not safe. It would be better, as a general thing, to wait till spring. If it is done early in the season, when the ground is wet, the plants will become firmly rooted in the fall, and ready for a vigorous growth in the spring. If the weather is not favorable at the proper season for transplanting, the plants may still be set, if proper facilities for watering can be afforded. But artificial watering is not as favorable to any plant as natural.

The next question to be settled is, the manner of transplanting, or the relative positions which the plants should occupy to each other. The most common practice is, to set them in rows about eighteen inches apart, and about twelve or fifteen inches apart in the rows, and allow the runners to fill up the intervening spaces; and perhaps after three or four years' growth, either spade up the entire bed and renew it, or a portion of the same in strips, in alternate years. Removing the entire bed is not a bad practice, provided it is performed properly, and at the proper season. We think, however, that the true principle to be observed in the cultivation of the strawberry, is to plant them in hills, about two feet apart each way, and then cultivate them very much as you would corn or potatoes; or mulch them well, and keep the weeds pulled out clean and nice. Our experience has confirmed us in the opinion, that the fruit is much larger, and more uniform in size and maturing, and can be kept much cleaner, which avoids washing, which operation deprives the fruit of much of its delicious flavor. The labor of cutting off the runners is but trifling, and the convenience of picking richly repays it, to say nothing of the quality and condition of the fruit. The hills, after a few years, will perhaps require a little trimming, which can be very speedily accomplished, and should be done soon after the fruiting season, leaving the young and most vigorous plants to produce fruit the following season.—*Iowa Homestead.*

The Grape Rot on Kelley's Island.—The grape rot on Kelley's Island prevails to a much greater extent this season, than ever before known. Mr. George C. Huntington, a grape grower and close observer, in a note to the Register, from the Island, dated Aug. 2d, says: "Whether the excess of rain, the present season, is the sole cause of the rot, or whether it is in any way connected with it, close observation for a number of years can only determine.—Should the disease proceed no farther, we shall still have half a crop of Catawbas, and a very large and full crop of Isabellas."—*Herald.*

Pruning Now.

Those who desire fruit next year, should forthwith—that is, without a day's delay—pinch off the ends of growing branches, or cut back their fruit trees, especially dwarf pears. Summer-pruning has a tendency to produce fruit spurs, while it also assists in forming handsome trees. We pinch the cherry tree, which inclines to a straggling form; also the mulberry, after sharp excisions in the spring, as well as young standard pears of the same inclination; and find that it has an excellent effect. Pear trees, dwarf and standard, where there is a thick growth of inner branches, should be thinned out carefully. It has the effect to bring them into early bearing, as well as upon the amount and quality of the fruit. Let all the trees be as low-branched as possible; the branches will protect the trunk against the hot suns of summer, and are the best preventive we know for "fire-blight."—*Germantown Telegraph.*

A New Raspberry.

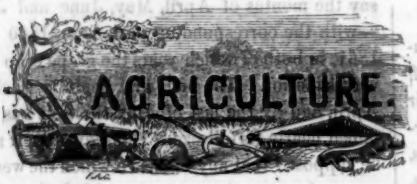
Mrs. Wood, wife of ex-Governor Wood, residing near Cleveland, who is a great horticulturist, has been propagating seedling raspberries, and has succeeded in bringing out one of rare quality, which has been christened the Naomi.—Its color is that of the old New England Red, but in size it resembles nothing in the raspberry line; a dish of the ripe fruit looks more like a dish of good-sized strawberries, than anything else; one being equal to two ordinary thimbles. The flavor also is greatly superior to anything of the kind I have ever seen. The canes are hardy, grow rank, and bear with wonderful profusion. To these facts, my eyes, nose and mouth bear their unqualified testimony, and all together declare it the best raspberry they have ever met with. The canes are now bending to the ground with their fruit, and will continue to ripen for weeks to come. These roots will be in market soon, and we recommend them, without hesitation, to all our fruit-growing friends.—Mrs. F. D. Gage.

Grape Rot on Kelley's Island—Influence of the Weather.—The grape rot on Kelley's Island has been the subject of such general remark for the last three or four weeks, and has been so generally attributed to the unusual amount of rain which we have had during the present season, that I thought it would not be uninteresting to compare the present season—say the months of April, May, June and July—with the corresponding periods in 1860 and 1861, in both of which years the grape crop was very superior. The buds first begin to swell in April, and by the last of July the fruit has obtained nearly its full size. Consequently, it may be supposed that any influence which the weather may have on the crop, (provided the vines have escaped the frosts of winter uninjured,) must be exerted during this period. The season of 1861—when the grape crop was as good as we have ever had—differed from the corresponding period in 1862—when the rot prevails to a much greater extent than ever before known—but very slightly in temperature, (seven-hundreths of a degree,) and in mean atmospheric pressure but twenty-six thousandths of an inch. But the rain during the latter period was very much in excess, say 5.39 inches, or more than thirty-two per cent. On the other hand, the amount of rain for the month of July, '62—which is called by many who rely only on their recollection, the wettest July for a long period of years—is less by fourteen-hundredths of an inch than in July, 1860, in which year the grape crop was all that could be desired.—Whether the excess of rain the present season is the sole cause of the rot, or whether it is in any way connected with it, close observation for a number of years can only determine. Should the disease proceed no farther, we shall still have half a crop of Catawbas, and a very large and full crop of Isabellas.—Geo. C. Huntington, Kelley's Island, Aug. 2d, '62.—*Sandusky Register.*

Peaches.—The prospect for a large crop of peaches is said to be unusually good, both in Pennsylvania and Delaware. New Jersey will, of course, furnish her share.

Trees by the Road, (Y.)—It will be useless to plant fruit trees by the roadside, as is practiced in Germany, until stock is kept from running at large. Every land-owner owns the road, and the produce of it, through his farm; the right of highway is all he gives to the public. Whoever pastures stock in the road, pastures on other people's land for nothing. Public opinion should be so changed as to make it a violation of law to pasture in the highway.

Those who would render their charities useful, should judiciously diffuse them. He who would have a good crop, must sow with his hand, and not pour out of the sack into one heap.



Ammonia as Manure.

"M. Demond," says a recent writer, "Director of the Superior Municipal School of Orleans, received at the late National Concours of Agriculture in Paris, a gold medal for details of his agricultural experiments and for his method of conducting the agricultural portion of his school. M. Demond makes agriculture one of the bases of a general education. His exhibition was very extensive, and he has published in a pamphlet the result of his experiments. He first endeavored to ascertain the relative value of various manures. He sowed the same species of wheat with thirty-two different manures, on thirty-two pieces of land, each receiving $25 worth. For two years, the yield of wheat was noted, and the facts derived from the experiments show that the classification of manures by English chemists according to the amount of nitrogen which they contain is entirely illusory. It will be remembered that Liebig, in his late letters, comes to the same conclusion."

The above is of the class of testimony now so very frequent in relation to the use of ammonia, and, if any organic substance acts well as a manure, practical farmers, who are also practical chemists, no longer attribute its action to the nitrogen it is capable of furnishing, but rather to the advanced condition of the inorganic constituents contained in its proximates; and had many of the English chemists, who have so erroneously advocated the ammonia theory, known more of the progression of primaries, they would long since have discovered that the value of every manure is due to the advanced condition of its inorganic constituents, and not to the amount of ammonia it is capable of furnishing.

Ammonia is useful only in shallow plowed soils, not underdrained nor sub-soil plowed. In such soils; additions of ammonia increase the power of water as a solvent for inorganic matter; but in thoroughly prepared soils, the reception of ammonia from the atmosphere, and its retention by the carbon and alumina of the soil, is all that is required, so that additional amounts are of no use. On deeply and well prepared soils, fairly charged with soluble phosphates and alkalies, no addition of ammonia will increase its fertility.—*Working Farmer.*

Muck---Treatment of.

The kind of muck to which we shall in the present instance refer, is that found in low places in uplands, or forming the soil of fresh marshes on the edges of rivers, in consequence in part of washings from the upland, and in part from sedimentary deposits from overflowings. Such muck usually contains a large amount of organic, and a still larger proportion of inorganic matter, resulting from the decay of organisms during all time.

For want of aeration this muck is frequently acid, and therefore requires treatment before it has any value as manure, unless it be intended to be used as a manure for potatoes, for which purpose it is generally successful if placed in the drills, and the potatoes thrown upon it, and always successful if the muck be accompanied with slight applications of **wood** ashes, or the lime and salt mixture we have so often recommended. For all other crops, however, the muck in its raw state has not sufficient value as a manure, to pay for its carriage, manipulation etc.

If treated in the following manner, muck may be rendered of high value. It should be dug in the summer or fall, and left exposed on the ditch banks for the winter; if deposited sufficiently early in the season on this ditch bank, to part with its water, it may be mixed with the lime and salt mixture, first thoroughly prepared, at the rate of four bushels of the mixture to each cord of the muck. The following spring it will be ready for use, not as manure, but as a valuable adjunct in the vicinity of a manure shed. Near stables, etc., and underlying the bedding of animals, it has a high value, for it receives the noxious gases emanating from the surface of their bodies, absorbs urine, and acts generally as a deodorizer; on the removal each day of the solid excretia from the stalls, this may be mixed under the manure shed with sixteen times its bulk of the decomposed muck, and all the gases emanating from the decomposition of the manure will be absorbed and retained by the muck.

The treatment at the ditch bank is quite necessary to save cartage, for if treated there as we have recommended, it will lose half its

weight without parting with any of its value; the portions parted with being simply water, while the freezings and thawings, assisted by the lime and salt mixture, will tear it apart, correcting its acidity, and rendering it as pulverulent as ashes. Some prefer leaving it exposed for the winter, carting it in the vicinity of their barn-yards, and there mixing the muck with the lime and salt mixture; where wood ashes can be procured, they may be used instead of the lime and salt mixture.

In the compost heap, this decomposed muck has great value, not only as a divider of manure, and in being capable of absorbing all gaseous and aqueous products of decomposition, but by having its own integrants so altered in condition as to become food for plants. If, at the lower end of the compost heap, a cistern be sunk, supplied with a pump, so as to return the drainage frequently to the top of the heap, the decomposition will go on without *fire-fanging*, and the soluble portions of the manure will become equally divided throughout the mass, and after sixty days the whole mass will be sufficiently homogeneous in character to be ready to be carted to the field when it is required for use.

We observe many writers now recommending the carting of the muck from the swamp directly to the field, leaving it there in heaps to be benefited by the disintegrating influences of the winter, but they certainly overlook the fact that the great value of the muck as an assistant in the compost heap, is not availed of by such practice.—*Working Farmer.*

Lois-Weedon Culture.—J. Smith writes us to know what we mean when speaking of the Lois-Weedon system of wheat culture? *Ans.* Rev. Samuel Smith has raised wheat for fourteen years in succession on the same land, without manure, and had an average yield of thirty-five bushels. The land was not fertile land either. His little work, "How to Grow Wheat with Profit," explains the secret of his success. It is in thorough cultivation. The wheat is sown in three rows, one foot apart, and then a strip of land one yard wide is left blank for the next year. This blank space is deeply and frequently cultivated until the harvest is nearly ready. Where the three rows are sown this year, will be the blank for next. The deep culture and porousness of the soil are favorable conditions for the preparation of mineral food from the soil, and for the admission of organic food from the air, in the form of gases which exist there in such abundance.

Hops.

In the Hop-Growers' Journal we find the census return of the growth of hops in this country for the last twenty years. These statistics disclose some very interesting facts. Of forty States and Territories from which the returns are published, there are but three—Florida, New Mexico and Dacotah—which do not grow hops. Of the remaining ones, the Southern States make a small and unimportant item, the great hop-growing country being the Middle States.

In 1840, the total number of pounds raised in the whole United States was 1,238,502 lbs. The hop-growing States at that time were New York, New Hampshire and Massachusetts—New York raising only about as much as the other two—447,250 lbs. In 1850, the total amount was 3,496,950 lbs. Of this amount, New York raised 2,536,299, New Hampshire very nearly the same amount as in 1840, and Massachusetts about half as much. In 1860, the total was 11,010,985 lbs., New York raising 9,655,542 lbs., showing an increase in ten years of 7,119,243 lbs. Vermont and Wisconsin alone, of all the other States and Territories, raised over 100,000 lbs.

The State showing the greatest decrease in production is Louisiana, which, in 1840, raised 115 lbs., and in 1860, but eight. Connecticut in the same period has fallen off four-fifths, and Massachusetts more than half. The greatest increase in production has been in the case of Wisconsin, which, in 1840, raised 133 lbs., and in 1860, 137,587 lbs. Vermont raises more than thirteen times the quantity reported in 1840, and New Hampshire but little more than one-half as much. At the West, Illinois has fallen off within twenty years more than half, while Indiana has more than doubled her product. The Middle States, with the exception of New York, average very nearly the same as in 1840.

The quantity of hops raised by New York, in comparison with the rest of the Union, is immense. Her growth in 1860 was 9,655,542 lbs., against 1,355,443 lbs. grown in the other thirty-six States and Territories. Three of our counties—Madison, Otsego and Schoharie—each raise more hops than are grown in all the United States outside New York.—*The World.*

A Plea for Birds.

A few weeks since, a colony of caterpillars made an unwelcome lodgment in the beautiful oak copse in Glenu Luss, Scotland, the property of Sir James Colquhoun. As the leafy food was abundant, the insects multiplied beyond all comprehension; each succeeding brood being apparently more ravenous and more destructive than that which had gone before. In the course of a short time, the trees, covering an aggregate space estimated at thirty acres, were completely stripped, and the trunks are now as bare of foliage, as they are in the heart of winter. The hand of man was perfectly helpless against these pests, which marched forward, or rather were eating their way onward, millions strong, and the utter desolation of this beautiful glen seemed a question of time.

At this stage, a new adventurer appeared upon the scene. It fortunately so happened, that the wandering family of rooks, flying over the glen, at once discovered that of which they were in quest—rations in immeasurable abundance. They commenced an assault upon the caterpillars at once; and having dined most heartily, they generously departed to make proclamation to all the rook brotherhood of the land of Goshen, upon which they had lighted. Although the nearest rook was eight miles distant, an advance guard set out from it without a moment's delay, and was immediately followed by the whole force of the rookery. By some extraordinary telegraphing, other rookery communities picked up the information; and within a day or two, it is believed, every rook within a circuit of twenty miles had found his way to the grub feast, at Glen Luss. In the beginning of the week, the glen and fields around it were black with crows, and the caterpillars had fairly met their match. The birds commence the assault by the earliest streak of morning light; and after making a copious breakfast, retire to the field for rest and digestion, returning to the feast, time after time, till darkness covers the land, and they can eat no more. The rooks which live furthest from the spot have deserted their ordinary homes for the time being, and have pitched their tents in the glen, where it is presumed they will remain so long as there are grubs to feed them. As it is, the progress of the caterpillars has been completely checked since the birds commenced in earnest; and it is believed, before long, that they will exterminate these destructive insects. The rooks are ably seconded by a corps of jackdaw auxiliaries; and indeed, they have allies in almost every little bird that flies; but the palm is given to the rook, as being the most active, and above all, the most hungry of the assailing force in Glen Luss.

We commend these facts to the attention of those agriculturists who stigmatize the rook as the thief of their grain and fruit, and who would extirpate him as a pest and cumberer of the ground. The fact is, the rook will not touch a field of grain so long as he can get a worm or grub; but if he cannot get these, he must live somehow. The vast benefit which this bird, as well as birds of a smaller class, confer upon mankind, by checking the growth of destructive insects, is sadly misunderstood by a generation which considers itself passing wise. The requisite knowledge is got by dear bought experience. In certain districts in France and America, the birds have been allowed to be wantonly destroyed by bird-nesting boys, and by thoughtless fellows with fowling pieces, and as a consequence, the insects multiplied so vastly that they have threatened to devour everything. Now, those who formerly allowed the poor birds to be slaughtered, are offering premiums to bring them back, and are at length protecting them by law.—Mrs. M. Ritchie, Astoria, N. Y.

Prospect of Crops.

Crops in Hancock---Bees.

Now that I know pretty well the result of the present crops, I will try to inform the editor and readers of the Farmer how we in Hancock county are off in the line of produce. We have almost everything to overflowing. The wheat is good, and about all secured; the meadows yield an extraordinary crop; oats are very heavy in the straw, very badly injured by the rust, and will be very light in the grain; corn is in rather a deplorable condition, on account of the great amount of rain and wet weather, which caused the weeds to grow, and prevented its being worked at the proper time; and if we may judge from present appearances, we may expect a poor crop. Fruits of all kinds are in abundance; apples are considerably blotched, I presume on account of the wet weather.

Bees have done remarkably well this season, in this county. My colonies have almost tripled themselves. I have had several of my spring swarms to swarm, and these second swarms are

apparently doing very well. I took, on the 25th of July, from some of my colonies, from thirty to thirty-five pounds of surplus honey each, the nicest I ever saw. I use the Langstroth Moveable Frame Hive. It has been proven, by this season's experience, that war has nothing to do with bees, as has been remarked.—A. Powell, Findlay, August, 1862.

Kansas---Crops---Locusts---War.

Through June, and up to July 9th, the season was very dry, and great fears were felt for the crops. Early root crops, as beets, parnips and carrots, are a failure; but we will supply their place with turnips. A plentiful rain set in on the 9th of July, and wet to the bottom of everything. Since then, we have had frequent and gentle showers, filling the springs, and securing our corn and potato crop.

The corn has already made up for its early check in growth. Deep-planted corn did not seem to suffer at all; while that planted the usual custom depth, curled, and in some instances, the leaves turned yellow. Late-planted corn came up but sparsely, though it stood the drouth well; some of it was planted two weeks before it came up. Deep planting, as well as plowing, is the order for this country.

Winter wheat is very fine, and a full crop all through the State; winter rye ditto; but spring wheat and oats are of little account.

The locusts—glad they come only once in seventeen years—sung their interminable sawmill song, groaned their extra groan, lived without eating till they paired, then lanced the under sides of the tree twigs to deposit their eggs, and disappeared. The fruit twigs, weakened by the boring, broke with the weight of the fruit or the wind, and greatly reduce our peach and apple crop. The locusts did not incline to cherry trees, and they have escaped the severe pruning.

The tumult of war and bushwhacking does not reach us more than you; but horse thieving and robbery is not uncommon. Our people, and the leading citizens of Wyandot, arrested a proven accomplice of the gang that operates from Fort Scott to St. Jo, and held a meeting, chose a Vigilance Committee, and after trial sentenced his house to be pulled down, and himself to leave the county, and if he returned, hanging. Our sheriff finally took him to Leavenworth jail. The military came down and arrested our citizens en masse. Some one had represented that they are the horse-thieves, and the culprit their victim. They have gone to Leavenworth on the boat to-day. They did not destroy the house, it being found that Uncle Sam had a lien upon it; the son having stolen Uncle Sam's horses last winter, his father got him out of jail by going security for him.—C. I. H. Nichols, Quindaro, Kansas, July, 1862.

Southern Indiana.

Our wheat is being threshed, and is coming to market quite freely, considering the low price paid, which is about sixty cents per bushel. The crop is turning out very heavy, and the aggregate yield of the State will, undoubtedly, be larger than in any previous year. Corn is backward, but is growing very rapidly now; much of it is silking, while a part does not yet show tassel.

Irish and sweet potatoes are better than an average. Hay, too, is heavy. Grapes set well but the rot is thinning the bunches rapidly. The produce of our vineyards will be small this year.

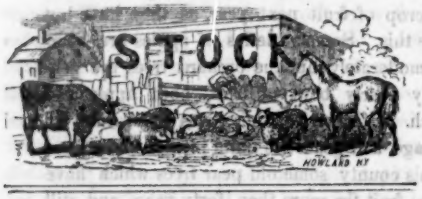
Fruit trees are getting a fine growth for a full crop of fruit next year, as they have but little this. Some varieties of apples are bearing moderately, but the orchard trees are generally nearly bare of fruit, both apple and peach. Of cherries, there was more than an average, and pears are quite plenty. There are in this county some old pear trees which have borne fruit for more than forty years, and still bearing. They are mostly seedlings, producing fruit of an inferior quality, but it shows conclusively that pear trees are healthy in this soil and climate. Plum trees grow well, but the fruit finds a deadly enemy in the curculio. The wild Chickasaw ripens its fruit in great abundance and perfection, but the hardiest cultivated sorts, will not come to maturity without the application of some remedy against insects.—S. Burnet, Vincennes, Ind., Aug., 1862.

Union Co.—We have been riding over considerable of the county during the past two weeks, and find that the wheat crop is of vast extent, and mostly put up into the shock.—Much apprehension had been felt that there would not be sufficient help to secure the harvest. This was all a mistake, although the recent rains have lodged a great deal; yet it has gone up into the shock like magic. White-headed men have marched into the field with old fashioned sickles, and put up their twenty-five dozen, laughing gaily as they marched home

at evening, as they did some forty years since, long before patent reapers were ever dreamed of. The r-r-riff of the scythe, s-s-sweep of the old cradle, and whir-r-r of the patent reaper, have kept the air in a musical tremble all over the State for the past two weeks, and the richest harvest by far ever known in Ohio has been safely secured.—*Marysville Press.*

KANSAS is going ahead this year some; our agricultural prospects are pretty good; wheat a fair crop; rye excellent; oats rather short; fruit some, where there are trees old enough. Nice rain yesterday; corn growing fine.—S. D. EWING, Leavenworth Co., Kansas, July, 1862.

PORTAGE COUNTY.—The wheat crop this season is the best we have had in ten years, and all secured in good order. The grass crop is better than in a number of years, and the excellent weather has been well improved; help is rather scarce on account of the war, and likely to be less. Oats are being harvested and are very heavy; corn looks well.—H. M., Nelson.



Measurements of Cattle and Sheep.

Questions are frequently asked in regard to the comparative size of breeds of cattle. The girth at the chine, although not a positive rule for assuming the relative weight of animals, is, at least, a general indication in regard to this. Although our leading breeds of cattle came from Britain, we have not a sufficient number of each breed in the country, to enable us to make as fair a comparison in regard to their size, as could be made in their own country. We have heretofore given some measurements of prize cattle in England and Scotland, some of which we assisted in taking. Robert Smith, a well-known farmer, as well as agricultural writer, furnishes the Mark Lane Express with an elaborate table, comprising the girth, in feet and inches, of nearly all the prize cattle and sheep, at the late combined show of the Royal and Highland Agricultural Societies. We have not room to give the entire list, and therefore restrict our notice principally to the aged classes of Short-horns, Herefords and Devons, the animals having received prizes in the order in which they stand:

		Age.	Girth.
Short-horn Bulls	1st	3 yrs. 3½ mos.	8 feet 4 inch.
	2d	3 " 7¾ "	8 " 8 "
	3d	4 " 5¾ "	8 " 9 "
Hereford Bulls	1st	3 " 11½ "	8 " 4 "
	2d	5 " 9¾ "	8 " 1 "
	3d	4 " 11 "	8 " 9 "
Devon Bulls	1st	3 " 1¼ "	7 " 7 "
	2d	3 " 2½ "	7 " 8 "
	3d	3 " 6¼ "	7 " 6½ "
Short-horn Cows	1st	3 " 7¾ "	7 " 10 "
	2d	3 " 6¾ "	7 " 8¼ "
	3d	3 " 5½ "	
Hereford Cows	1st	6 " 6¾ "	8 " 1 "
	2d	6 " 4½ "	7 " 8½ "
	3d	5 " 11½ "	7 " 10 "
Devon Cows	1st	6 " 1¾ "	7 " 1 "
	2d	7 " 5½ "	7 " 0 "
	3d	3 " 7 "	6 " 11 "

In the following breeds, the greatest girth of bulls was: a Sussex, 3 yrs. 5 mos. old, 7 ft. 10 in.; Long-horned, 4 yrs. 6 mos. old, 8 ft. 2 in.; Polled Aberdeen, 8 yrs. 1½ mos. old, 8 ft. 2 in.—that of another in the same class, 4 yrs. 3½ mos. old, 8 ft.; West Highland, 7 yrs. 2½ mos. old, 7 ft. 2 in.; Kerry, 6 ft.

Of sheep, the girth of a Cotswold ram, 3 yrs. 4½ mos. old, was 6 ft. 1½ in.; of a Leicester, 2 yrs. 4 mos. old, 4 ft. 11 in.; of a Lincoln, 3 yrs. 3 mos. old, 5 ft. 3 in.; of a South-down, 3 yrs. 4 mos. old, 4 ft. 10 in.; of a Shropshire-down 3 yrs. 3½ mos. old, 5 ft. 7 in.—another in same class, 1 yr. 3 mos. old, 5 ft. 3 in.; of an Oxfordshire-down, 2 yrs. 4½ mos. old, 5 ft. 9 in.—all having been shorn the present season.—*Boston Cultivator.*

Sweeney in Horses.

Sweeney is a very common disease in the West, and every man has a specific for it. The remedies vary—from rubbing the shoulder with a rusty bacon rind, to blistering, roweling and inflating the skin with air. I have for several years held to the opinion, that anything which will cause a horse to favor one fore limb for a great length of time, will cause the muscles of the shoulder to shrink, and the horse will have the Sweeney. I had a mare, aged, who had a splent high on the limb, which kept her lame for two or three months, and as she did not use the limb enough to keep the muscles in vigorous health, they shrank, and the mare was dreadfully sweenied. Last spring, Mr. Kirkpatrick brought a large, young draught horse to me, and wished me to cure him of sweeney. He did not know how long the disease had prevailed, but wanted me to take him and warrant the cure. I told him I did not do business after this fashion, but would give

him the best advice I could afford, (as he would not pay for any treatment, unless it cured his horse.) On examination, I found that the shoulder of the animal had been blistered and roweled in the region of the scapula, where the muscles had shrank, and the point of the shoulder was considerably larger than the other; a condition he had not noticed, on account of his mind being occupied with the bugbear sweeney. I advised him to apply stimulating liniment to the parts, and practice thorough hand-rubbing in the region of the perished or atrophied muscles. I have not seen the horse since, yet he has no doubt improved. My theory is, that anything which prevents the healthy exercise of the muscles, will cause them to diminish in size, and it appears particularly so with the muscles under consideration; long-continued lameness of the fore extremities will have this effect on these muscles, no matter where the disease is located.—S. B. Sᴛᴏᴡᴇʟʟ, V. S. *Am. Veterinary Jour.*

Cᴏɴᴄᴇɴᴛʀᴀᴛᴇᴅ Cᴀᴛᴛʟᴇ Fᴏᴏᴅ, (A.)—The concentrated cattle food, talked of two or three years ago, is a humbug. Any farmer can make it by grinding corn and other grains, far better than that advertised. The stimulating seeds, with nitre, sulphur, etc., added to make it medicinal, are of no use to well cattle.

The Olive.

The Olive Tree and its History.

The olive tree (*Olea Europæa*) came originally from Asia, and grows abundantly about Aleppo and Lebanon; it is naturalized in many parts of Southern Europe, being found in woods and hedges, and in this wild state produces a fruit of no value. When cultivated, however, it becomes one of the richest productions of the south.

It is an evergreen tree, with thick and leathery leaves, well calculated to resist the action of the water, as they once did for the space of 271 days—the period that elapsed from the day on which "the fountains of the great deep were broken up," until the evening when the dove came in to Noah, "and lo, in her mouth was an olive leaf plucked off;" and ever since, in all ages and countries, wherever this tree is known, has its branch been the favorite emblem of peace. The same chapter of Genesis also illustrates the locality of the olive. The ark had rested on Mount Ararat one hundred and fourteen days, and the tops of the mountains had been seen forty days; yet when Noah sent forth the dove the first time, it returned, finding "no rest for the sole of her foot;" and it was not until seven more days had passed, that the waters retired from the plains, valleys and rocky ravines, where the dove is accustomed to seek its food, and in which the olive delights to grow. The flowers are delicately small and white, are very numerous, and fall off in showers when the tree is shaken. So Eliphaz, upbraiding Job for his sins and misfortunes, and alluding to the loss of his children, says: "The wicked man shall shake off his unripe grape as the vine, and shall cast off his flower as the olive." (Job, 15: 33.) The oval fruit has a delicate light-blue bloom upon it, but when this is rubbed off, is a deep purple color, shines, and has lost its beauty.

To an English eye, this tree has, at first sight, no striking characteristic of beauty. Its height, which rarely exceeds thirty feet, creates no idea of grandeur, which in countries like England, that abound in lofty forest trees, is considered one of, if not the chief element of beauty in trees. Again, it has a most sober hue, that ill agrees with our pre-conceived notions of the golden tints of southern foliage: hence those who, in the rapidity of traveling, glance at it with a careless eye, are generally disappointed, and hence it is almost universally compared with our own willow. Southey speaks of its "willowy foliage," but the points of resemblance are not sufficiently well marked to justify a comparison of an olive-grove with an ozier bolt. It is true that both trees are of about equal height, and have the under surface of their leaves of a lighter color than the upper, which is very beautiful when the branches are turned or lifted by the wind.

The cultivated olive, too, is pollarded, or deprived of some of its branches, in order to develop the young wood; but as fruit is the object, and not merely the wood, as is the case with the willow, its branches are never destroyed year after year; and consequently, it never has the unsightly appearance that that tree has when deprived of its foliage. The poet Virgil contrasts the olive with the willow. Making a shepherd praise one man at the expense of another, he says: "You are as much superior to him as the dusky willow yields in beauty to the pale olive." But it has charms superior, not only to the willow, but to most other trees. If the eye is not attracted towards it at first by any strik-

ing beauty, there are few natural objects that improve so much upon acquaintance. The more you see it, the more its graceful form and quiet beauty win your admiration. It appears to the greatest advantage in rocky situations—in the country round Athens, for example, where an absence of general vegetation, during the warmer months, produces a beautiful contrast between the naked and burning rocks, and the luxurious olive groves of the lower lands. A more beautiful scene can hardly be imagined than that from the Acropolis, a rocky fortress, that rises abruptly on the south of the city. Standing within the portico of its Parthenon, you look down upon Mars Hill, where St. Paul declared unto the superstitious Greeks the unknown God, whom they ignorantly worshipped. Beyond is the scarcely less famous pulpit of Themistocles; but it is to the plain to which the eye flies for relief, for—

> See there the Olive Groves of Academe,
> Plato's retirement.

Previous to the late revolution, this grove extended from the walls to the city of the sea; but during the war, 20,000 trees were burnt, and many an old tree may now be seen reduced to charcoal on one side, yet retaining its vitality on the other. The facility with which this tree takes fire ,even when standing in the green state, was not unknown to the ancients, and is thus noticed by Virgil:

> "Sparkling fire, from hind's unwary hands,
> Is often scattered o'er their unctuous rinds,
> And after spread abroad by raging winds;
> For first the smoldering flame the trunk receives.
> Ascending, then, it crackles in the leaves;
> At length, victorious to the top aspires,
> Involving all the woods in smoky fires."
>
> —*Dryden's Virgil, Georgics, II.*

Since the peace, many thousand trees have been destroyed by floods. Drainage has been neglected, and the water stood for months upon the roots, and eventually killed the trees. A burning sun, acting upon this mass of decayed vegetable matter, generated one of the most dreadful fevers that ever visited Athens. It paralyzed the whole population; for two years, there was scarcely an indication of exertion to cultivate the soil. In the suburbs, where scraps of land are generally so precious, there were no gardens; a few fig trees and a solitary palm—which the war had spared—were almost the only remnants of former industry; but the government, in 1835, had succeeded in draining the whole of the neighboring country, and the olive grove of Athens was rapidly recovering from its losses by fire and water.

The Naturalist.

Old Eagles and Nests.

The Girard (Pa.) Union of last week gives the following interesting account of an old couple of Eagles, their troubles and their constancy. It says:

Sixty years ago, when the township was first settled, a pair of eagles of the white-headed or bald species, had a nest in a tall tree, on the farm of Mr. Kelley. They were not disturbed, and for twenty years they occupied the nest, annually rearing and sending forth a brood of eagles, when a violent storm overturned the tree, and of course destroyed their habitation. They then built their home on a lofty and inaccessible sycamore, on the farm of Riley Pettibone, adjoining Mr. Kelley's, and enjoyed aquiline happiness with uninterrupted security forty years longer, raising to eaglehood two or three chicks yearly.

A few weeks ago, a high wind wrenched off the limb containing the nest, and threw it to the ground with such energy, that it was torn to atoms, and a very young and very bald eagle killed. The nest was large, being made of about ten bushels of sticks and leaves. This aged and persevering couple are now making a third nest on another sycamore near the one lately destroyed. How old these birds are is not known, but that they are the same pair found here by the earliest settlers, there is no doubt. They have been so long familiar with the presence of men, that they can be approached within a few feet; and their great age, constancy and friendliness have given them the respect of the neighbors, who would turn out en masse and mob the unlucky sportsman who should attempt to shoot or dispoil this royal family.

Voices of Animals.

There is a chapter in the natural history of animals that has hardly been touched upon as yet, and that will be especially interesting with reference to families. The voices of animals have a family character not to be mistaken. All the canidæ bark and howl. The fox, the wolf, the dog have the same kind of utterance, though on a somewhat different pitch. All the bears growl, from the white bear of the Arctic snows to the small black bear of the Andes. All the cats *miau*, from our quiet fireside companions to the lions and tigers, and panthers of the forest and jungle. This last may seem a strange

assertion; but to any one who has listened critically to their sounds and analyzed their voices, the roar of the lion is but a gigantic *miau*, bearing about the same proportion to that of a cat as its stately and majestic form does to the smaller, softer, more peaceful aspect of the cat. Yet, notwithstanding the difference in their size, who can look at the lion, whether in his more sleepy mood, as he lies curled up in the corner of his cage, or in his fiercer moments of hunger or of rage, without being reminded of a cat? And this is not merely the resemblance of one carnivorous animal to another; for no one was ever reminded of a dog or a wolf by a lion. Again, all the horses and donkeys neigh; for the bray of the donkey is only a harsher neigh, pitched on a different key, it is true, but a sound of the same character, as the donkey himself is but a clumsy and dwarfish horse. All the cows low, from the buffalo roaming the prairie, the musk-ox of the Arctic ice-fields, or the jack of Asia, to the cattle feeding in our pastures. Among the birds this similarity of voice in families is still more marked. We need only recall the harsh and noisy parrots, so similar in their peculiar utterance. Or take, as an example, the web-footed family. Do not all the geese and the innumerable hosts of ducks quack? Does not every member of the crow family caw, whether it be the jackdaw, the jay, the magpie, the rook, in some green rookery of the Old World, or the crow of the woods, with its long melancholy caw, that seems to make the silence and solitude deeper? Compare all the sweet warblers of the songster family—the nightingales, the thrushes, the mocking-birds, the robins—they differ in greater or less perfection of their note, but the same kind of voice runs through the whole group.—*Agassiz.*

Health and Disease.

Take Care of the Feet.

"Of all parts of the body," says Dr. Robertson, "there is not one which ought to be so carefully attended to as the feet." Every person knows from experience that colds, and many other diseases which proceed from colds, are attributable to cold feet. The feet are at such a distance from "the wheel at the cistern" of the system, that the circulation of the blood may be very easily checked there. Yet, for all this, and although every person of common sense should be aware of the truth of what we have stated, there is no part of the human body so much trifled with as the feet. The young and would-be genteel footed, cramp their toes and feet into thin-soled, bone-pinching boots and shoes, in order to display neat feet, in the fashionable sense of the term. There is one great evil, against which every person should be on their guard, and it is one which is not often guarded against—we mean the changing of warm for cold shoes or boots. A change is often made from thick to thin-soled shoes, without reflecting on the consequences which might ensue. In cold weather, boots and shoes of good thick leather, both in soles and uppers, should be worn by all. Water-tights are not good if they are air-tights also; India rubber overshoes should never be worn, except in wet splashy weather, and then not very long at once. It is hurtful to the feet to wear any covering, that is air-tight over them, and for this reason India rubber should be worn as seldom as possible. No part of the body should be allowed to have a covering that entirely obstructs the passage of the carbonic acid gas from the pores of the skin outward, and the moderate passage of air inward to the skin. Life can be destroyed in a very short time, by entirely closing up the pores of the skin. Good warm stockings and thick-soled boots and shoes are conservators of health, and consequently of human happiness.

Life Prolonged by Care.—The longevity of the human race is steadily increasing in civilized nations, if statistical tables can be trusted, and the following item from the Methodist shows the influence of good keeping on long life:—"Few men take better care of themselves than the better class of British noblemen. They aim to make life as perfect as possible—to have as little jarring of the wheels and cogs as may be. They are, many of them, the hardest workers, and the healthiest men in the world; and it may be truly said, that while one part of mankind develops muscle at the expense of brain, and the other develops brain at the expense of muscle, the British nobleman is the only man now living who succeeds in cultivating at once brain and muscle. That their efforts are successful, here is pretty good proof. Twenty-four members of the British peerage died within the year 1860; and these twenty-four have exactly completed, on the average, the full measure of the allotted span of human life, the three-score years and ten. They were as follows:—Viscount Arbuthnot, 82; Lord Londesborough, 54; Vis-

count Southwell, 83; Viscount Germanston, 84; Lord Oranmore, 72; Bishop of Rochester, 84; Earl of Lonford, 42; Baroness Stratheden, 63; Lord Fitzgerald, 60; Viscount Guillamore, 87; Baroness Wentworth, 67; Earl of Strafford, 82; Lord Helesbury, 80; Archbishop of York, 72; Lord Sandys, 68; Lord Elphinstone, 53; Bishop of Worcester, 77; Earl of Lauderdale, 76; Earl of Cawdor, 70; Lord French, 74; Earl of Leven and Melville, 75; Duke of Richmond, 69; Earl of Manvers, 82; Earl of Dundoland, 85. Total of ages, 1,680 years; which, being divided by 24, gives exactly 70 years to each. It would be difficult to find a parallel to this in any class of any country in the world.

Method of Preserving Fruit.

PRACTICED BY THE ONEIDA COMMUNITY, N. Y.

1. The fruit, properly hulled, assorted or prepared, is placed in clean glass bottles manufactured for the purpose, filling them to the neck.

2. Prepare a sirup of melted refined or white sugar, and pour into the bottles, by the following rule, viz: Allow six ounces of sugar to one quart of fruit, or melt one pound of sugar in one-half pint of water, and give one-half pint of the sirup thus produced to one quart bottle of fruit.

3. Place the bottles in a steaming box, or a boiler with a false bottom, which may be made of loose slats, resting on supports so as to raise it a little above the water in the boiler. Cover the boiler or steam box, and gradually raise a steam that will thoroughly heat the fruit and sirup in the bottles, bringing them to the boiling point. This may take an hour from the commencement of heating; but whatever the time, be sure that the whole contents of the bottles are at boiling heat.

4. Have ready corks, steamed or moistened sufficiently to make them flexible. They should be large enough to fill the neck of the bottle tightly, and require some force to crowd them in. One cork, as procured of dealers, allows of being cut in two, so as to stop two bottles.

5. Have ready a vessel of melted sealing wax, compounded of the following materials and proportions: One pound of rosin, 1½ ounces tallow, 3 ounces beeswax.

6. The fruit being sufficiently heated, take the bottles successively to a table, and quickly cork them. With a towel in the hand, they should be carried in such a way as to close the opening, and retain the heated steam in the bottles on the way to the corking table. The corks may be forced in by a blow of a mallet, or better, by a small lever arrangement fixed to work at the right height above the table. When inserted as far as practicable, if any part of the cork remains above the bottle, pare it off with a sharp knife.

7. Immediately after the cork is in its place, a person should stand ready, and apply a coat of sealing-wax to the end of the cork with a paint or lather brush, to close the pores of the wood.

8. Next proceed to seal the bottle by dipping its mouth in the melted sealing-wax, so as to cover the bulb. Then transfer it to a basin of cold water, dipping to the same depth, to cool the wax. If the dipping is carried below the bulb or rim at the mouth of the bottle, there is danger of cracking the glass. Now examine the sealed part to see if the wax has formed blisters. If there are blisters, rub them away with the finger, using a little tallow or oil to prevent sticking.

9. Repeat the dipping operation in wax and in water. See that the wax is left smooth and without flaws, and the sealing is complete.

10. Pack away on shelves or in chests in a cool, dry cellar. If placed on shelves, a cloth should be hung before them to exclude the light. In a few days after packing away, inspect the bottles to see if any show signs of fermentation, which may be detected by a foamy appearance of the fruit. If this is observed in any bottle, it denotes either a crack in the glass, or that the sealing was imperfect. The bottle should be opened or examined, the contents scalded, and the process of sealing repeated as before. In some cases during the season, a little vegetable mold may be seen to gather on the surface of the fruit in the bottles, but this is not to be regarded, as it can be readily separated on opening the bottles, leaving the mass of fruit without harm.

Two or three persons can carry forward the different operations of preserving at the same time, and with more convenience than one alone.

The rule for sirup given above, is adapted to the strawberry, cherry, and other similar fruits. Very acid fruits, like the currant, will allow a greater proportion of sugar.—*The Oneida Community Circular.*

ZINC WASH FOR ROOMS.—Mix oxide of zinc with common size, and apply it with a brush, like lime whitewash, to the ceiling of a room. After this, apply a wash, in the same manner, of the chloride of zinc, which will combine with the oxide, and form a smooth cement with a shining surface.

Family Reading.

Life Flowing Backward.

A tree lives only while new shoots are produced upon it. The new twigs and leaves not only procure sustenance for themselves, but even keep the trunk itself alive; so that the chief order of support is just opposite what it seems, and the tree lives from above, down—as do men and all other creatures. So in history, it requires a vast amount of original thought or sentiment to sustain the old structural forms. This gigantic baobab of Catholicism, for example, is kept alive by the conversion of Life into Belief, which takes place age after age in the bosoms of women and men. The trunk was long ago in extensive decay; every wind menaces it with overthrow; but the hearts that bud and blossom upon it, yearly send down to the earth, and up to the sky, such a claim for resource as surrounds the dying trunk with ever new layers of supporting growth. Equally are the thought, poetry, rhetoric of by-gone times kept in significance by the perceiving, the imagining, and the sense of a flowing symbolism in Nature, which our own time brings to them. To make Homer alive to this age, what an expenditure of imagination, of pure feeling and penetrations does it demand! Let the Homeric heart or genius die out of mankind, and from that moment the "Iliad" is but dissonance, the long, melodious roll of its echoes becomes a jarring chop of noises. What chiefly makes Homer great, is the vast ideal breadth of relationship in which he establishes human beings. But he in whose narrow brain is no space for high Olympus, and deep Orcus; he whose coarse fibre never felt the shudder of the world at the shaking of the ambrosial locks, nor a thrill in the air when a hero falls—what can this grand stoop of the ideal upon the actual world signify to him? To what but an ethical genius in men can appeal for guest-rites be made by the noble "Meditations" of Marcus Antoninus, or the exquisite and perhaps incomparable "Christian Morals" of Sir Thomas Browne? Appreciative genius is centrally the same with productive genius; and it is the Shakspeare in men alone that prints Shakspeare and reads him. So it is that the works of the masters are, as it were, perpetually re-written and renewed in life by the genius of mankind.—*D. A. Wasson.*

Character of the Gentleman.

I have stated already that the forbearing use of power is a sure attribute of the gentleman; indeed, as we may say that power—physical, moral, purely social or political—is one of the touchstones of genuine gentlemanship. The power which the husband has over his wife, in which we must include the impunity with which he may be unkind to her; the father over his children; the old over the young; and the young over the aged; the strong over the weak; the officer over his men; the master of a vessel over his hands; the magistrate over the citizen; the employer over the employed; the rich over the poor; the educated over the unlettered; the experienced over the confiding; the keeper of a secret over him whom it touches; the ordinary man, even the clever over the silly—the forbearing and inoffensive use of all this power or authority, or a total abstinence from it where the case admits it, will show the gentleman in plain light.

Every traveler knows at once whether a gentlemanly or a rude officer is searching his trunk. But the use of power does not only form a touchstone; even the manner in which an individual enjoys certain advantages over the others, is a test. No gentleman can boast of the delights of superior health in the presence of a languid patient, or speak of great good luck when in hearing of a man bent by habitual misfortune. Let the man who happily enjoys advantages of a pure and honest life, speak of it to a fallen fellow being, and you will soon see whether he be, in addition to his honesty, a gentleman or not. The gentleman does not needlessly and unceasingly remind an offender of a wrong he may have committed against him. He can not only forgive, but he can forget; and he strives for that nobleness of soul and manliness of character which impart sufficient strength to let the past be truly past. He will never use the power which the knowledge of an offence, a

false step, or an unfortunate exposure of weakness gives him, merely to enjoy the power of humiliating his neighbor. A true man of honor feels humbled himself, when he cannot help humbling others.—*Dr. Lieber.*

Sunshine.

If there's a pleasant little nook,
Where all is green and fair,
Thou mayst be very sure indeed
The sunshine has been there.

If there's a tree that's laden with
Ripe fruit, fine, rich and rare,
You never need to doubt the fact,
That sunshine has been there.

If there's a field of golden grain,
That is not scarce nor spare,
Look up to God with thankful hearts,
For sending sunshine there.

If there's a face that's glad with smiles,
The heart may know its care,
But broadly shining over all,
You may see sunshine there.

If there's a joyous, happy band,
Whose hearts are full of mirth,
Dark clouds dare throw no shadows there
Where sunshine's round the hearth.

God bless the sunshine on the hill,
The sunshine in the heart;
It warmly thro' our heart doth thrill,
And dulls the sharpest dart.

Willie one day asked his mother, just before dinner, for a piece of gingerbread. "No, my dear," she answered, wait a little while, until dinner is ready, and you will then have an appetite." Dinner time came, and Willie was offered roast beef, but declined. Pudding? He didn't want that, either. Fruit? "No, I thank you, mamma." "Why, Willie, I thought you were hungry," she said. "So I am, mamma, but you promised me *appetite* for dinner, and I am waiting till it comes."

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EAGLE WORKS

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Patented June 22, '58—Re-issued Dec. 20, '59.

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LAST FALL, to be THE BEST EVAPORATOR, and the only successful SORGHO SUGAR MAKER yet brought out.

In January last, Ohio and Illinois held State Sorgho Conventions. A Convention in Michigan was also held in April. Premiums amounting to $256 in all, were offered for the best sample of Sugar from the Cane. Thirty samples were offered, the largest of which, the product of LESS THAN TWO ACRES, weighed about ONE TON!—Upon inquiry, all the Sugar offered, at all these Conventions, was found to have been made on

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For economy in fuel, excellence in construction, and superiority in speed and quality of work, it is beyond all competition.

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BLYMYERS, BATES & DAY,
Manufacturers, Mansfield, O.

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In a word, a STRICTLY FIRST-CLASS SUGAR MILL, pressing the cane closer, and with less power, than any heretofore or now in use.

We have now ready for delivery, seven sizes, double and triple rolls, single and double geared, vertical and horizontal, for horse-power. Large vertical or horizontal geared mills for steam or water power, and Blandy's Portable Steam Engines, suitable for them.

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With Engine, Pan, &c., complete.

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